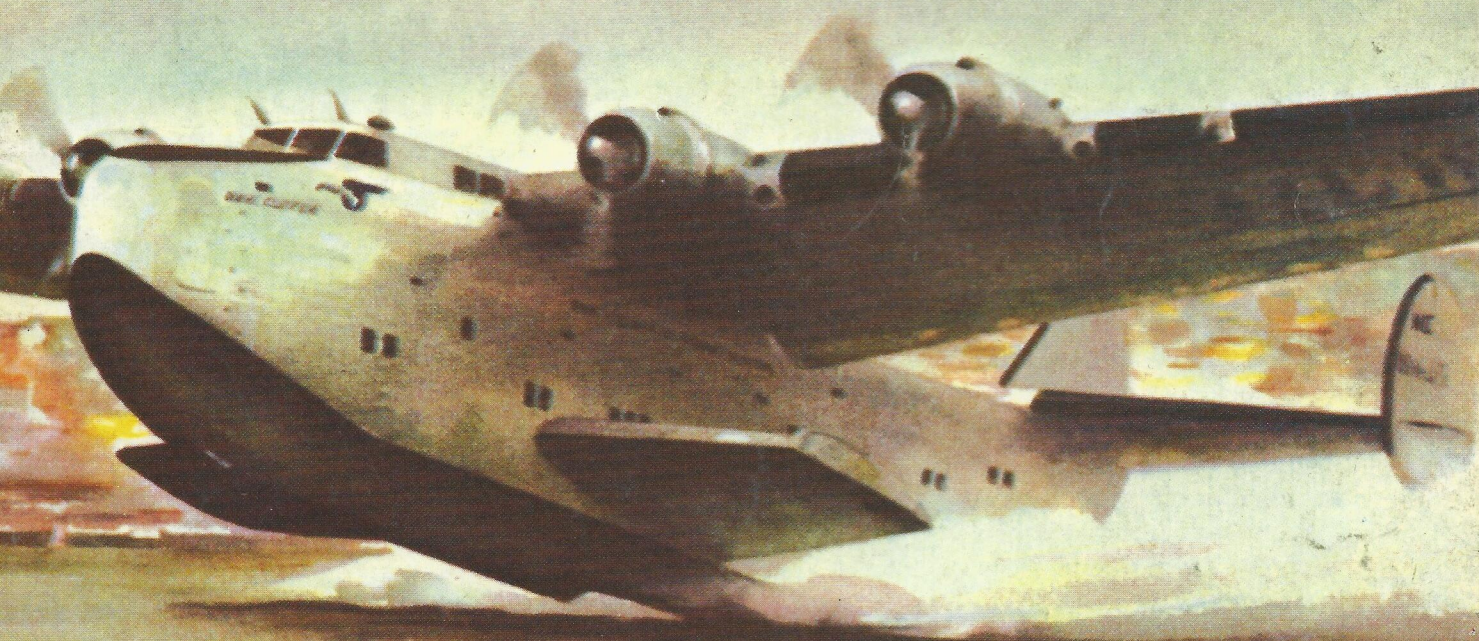


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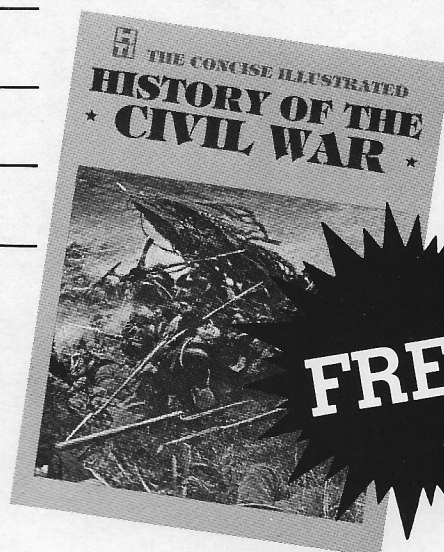
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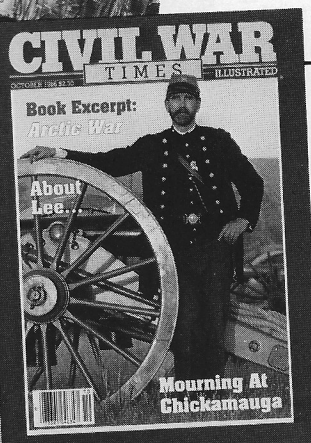
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Cover

A half-century ago Pan American flying boats blazed the trail for the transatlantic airline service that today carries millions of passengers between the United States and Europe. John McCoy's watercolor depicts the *Dixie Clipper's* historic landing at Lisbon, Portugal, on June 29, 1939, as the seaplane completed the first scheduled passenger flight from New York.

American History Illustrated (ISSN 0002-8770), is published monthly except July and August by Cowles Magazines, Inc., 2245 Kohn Road, P.O. Box 8200, Harrisburg, PA 17105-8200. Subscriptions: \$20.00 a year. In Canada and all other countries, \$27.00. Second Class postage paid at Harrisburg, PA 17105 and at additional mailing offices. Printed by World Color Press, Effingham, IL. Cowles Magazines, Inc., publications include British Heritage, Bowhunter, Civil War Times Illustrated, Country Journal, Early American Life, Fly Fisherman, and National Historical Society. All rights reserved. Permission to reproduce the issue or portions thereof must be secured in writing from the editor. Address inquiries to American History Illustrated, Box 8200, Harrisburg, PA (717-657-9555). This magazine accepts no responsibility for unsolicited manuscripts not accompanied by return postage. Copyright 1989, Cowles Magazines, Inc. POSTMASTER: Send address changes to American History Illustrated, P.O. Box 1776, Mt. Morris, IL 61054. Subscription questions: call (800) 435-9610 (in Illinois, (815) 734-6309).
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Southeast: Herb Schmitt & Company, Publisher Representatives, 4001 Wetherburn Way, Norcross, GA 30092. (404) 441-0946.

Midwest and West Coast: Advertising Media Sales, Thomas Lamberson, 15W700 Frontage Road, Suite 235, Hinsdale, IL 60521. (312) 887-9503.

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READING ABOUT HISTORICAL EVENTS takes on an added dimension when one has some firsthand impressions on the topic. Two articles in the current issue held that special dimension for me.

Although I never saw, much less flew in any of the magnificent Pan American Clippers that bridged the Pacific and Atlantic just before World War II (see pages 34-47), I did once get a small taste of what being a passenger aboard one must have been like. As a midshipman on an aviation/amphibious cruise back in 1956, I had the great fun of making an orientation flight aboard one of the Navy's big P5M Marlin flying boats. These beautiful patrol craft, which served the fleet until 1967, were the final legacy of the now-vanished Martin and Boeing Clippers. After more than thirty years, two recollections of that orientation flight stand out: taking a turn at the controls on the P5M's spacious flight deck; and experiencing the terrific takeoff run. Seaplanes really were "flying boats," and taking off from the water was an experience totally unlike that aboard any land plane. The roar of the engines, sound and feel of the hull pounding across the water, and cascading spray as the seaplane accelerated created a montage of sensations that unfortunately eludes adequate description. Certainly passengers aboard these aircraft experienced flying on a more elemental level than we do today.

Production deadlines don't allow much time away from the editor's desk, but one day in early March I drove 135 miles west of our editorial offices for my first visit to Johnstown, Pennsylvania, site of the tragic flood described on pages 12-25. A twentieth-century city now stands in place of the one devastated in 1889; nevertheless I did not find it hard to imagine how the wall of water that ravaged Johnstown had swept down the narrow Allegheny Mountain valley in which it is set. For me, however, the most riveting and sobering reminder of the flood was the old South Fork Dam, now a national historic site about eight miles northeast of Johnstown. Route 219 crosses the creek bed a few hundred yards below the site, and trees grow on the dam's two remaining abutments. But aside from these changes, the scene appears nearly as it must have one hundred years ago this month when the dam gave way. In my mind's eye I stood perhaps a few feet from those exhausted workmen who on May 31, 1889 watched in awe as millions of tons of lake water swept through the four-hundred-foot-long gap, dooming more than two thousand inhabitants in the valley below. Reminders of the power of nature and the folly of man are still evident.

This spring and summer Johnstown will host thousands of visitors as it recalls the tragedy that took so many of its citizens—and celebrates the spirit that enabled it to rise again. A new museum in town, as well as a new National Park Service center at the dam site, graphically document the tragic flood. Numerous centennial events are planned. A visit to Johnstown is well worth the trip.

Ed Holm

Mailbox

Lincoln Home Reversed

Either the National Park Service made a major error in its restoration of the Lincoln Home ["Mr. Lincoln's Springfield," March issue] or the photograph of the Lincoln bedroom on page 29 was printed backward. Thanks for the preview of the home, however. My family and I can hardly wait to see it in person.

William L. Brunia
Urbandale, Iowa

William Brunia correctly spotted an error; the color transparency showing the Lincoln bedroom was inadvertently reversed during preparation of the illustration. Also reversed was the picture of the home's exterior on page 27.

Filling Walker's War Chest

Perhaps your readers may be interested in one form of solicitation that "filibuster" William Walker used to finance his endeavors ["El Presidente Gringo," February issue].

In October 1853, he wrote the following to my great great uncle, the Hon. George W. Wright, in San Francisco, and enclosed two \$500 bonds for the INDEPENDENCE LOAN FUND: "Dear Sir, This note will be delivered to you by Mr. Henry P. Watkins. Mr. Watkins remains at this place as Agent for the Sonora enterprise, and if you can aid him in accomplishing any purposes he may have in relation to the matter you will oblige. Your obedt servant [signed] Wm Walker"

The bond read: "THE INDEPENDENCE LOAN FUND has received of xxxxxxxxxx the sum of Five Hundred Dollars and the Republic of Sonora will issue to him or his assigns a land warrant for one square league of land to be located on the public domain of said Republic. Signed by use this first day of May 1853. [signed] Wm Walker, Col. of Ind. Regiment."

What was done with this solicitation is open to speculation.

Melvin A. Goodspeed, Jr.
Chevy Chase, Maryland

Continued on page 6

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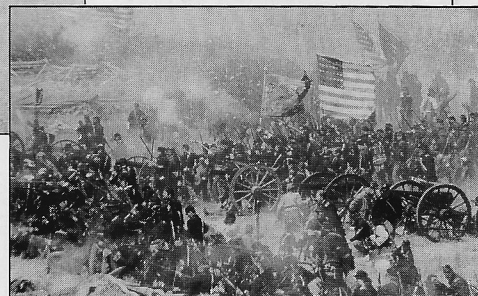
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Dakotan Capitals Switched

I noted an error in your "History Today" column ["Northwest State Centennials," March issue]. It listed Bismarck as the capital of South Dakota. Pierre is South Dakota's capital; Bismarck is capital of North Dakota.

A SoDakker by birth, I'm constantly spreading the faith and extolling the virtues of my native state. I'd also like to enlighten others on the pronunciation of our capital city, Pierre, which rhymes with "ear." It is named for its sister city, Fort Pierre, just across the Missouri River. Fort Pierre was founded in 1832 by the American Fur Company, which established the fort as a successor to Forts Teton and Tecumseh that had earlier occupied the site. While the fur company's Pierre Choteau, Jr., after whom the fort was named, enjoyed the French pronunciation, our capital does not.

James S. McKeown

Jaffrey Center, New Hampshire

During last-minute editing to fit "History Today" material into the available space, we picked the wrong state capital. We extend our apologies to all SoDakkers.

Shenandoah Memories

Colonel Wensyel's story, "Shenandoah" [February issue] reflects a lot of research on his part to put together such a detailed account of the last hours of the *Shenandoah* in such a breath-taking way. I congratulate him.

In 1924, when I was thirteen, I was a Boy Scout studying to earn a merit badge in signaling; I elected to learn Morse code. During a regular meeting in my then-hometown of Gainesville, New York (near Rochester) a Scout came bursting in late shouting that there was a great fish up in the sky, and we'd better come and see it.

We raced out to see "the great fish," and there the dirigible was in all her shining beauty, not far up in the dwindling twilight. What a sight! None of us had ever seen such a thing. As we watched her recede slowly into the descending

darkness, I saw some flashing lights coming from the ship:
[S H E N A N D O A H].

The Morse letters were a simple combination, or I probably would not have been able to read them at that stage of learning and would have missed a meaningful childhood experience.

After the meeting I told my mother about this exciting event, and she suggested that I write the ship's commander to ask if I had read the signals correctly. In due course I received a reply from Lieutenant Commander Zachary Lansdowne.

The letter read in part: "The signals you saw were in reply to what we thought were signals being sent to the ship by someone on the ground. It is good to know that in an emergency we can depend on boys like yourself who are alert and prepared to receive messages it is sometimes necessary to send. I want to congratulate you on the progress you have made in the study of visual signaling and I hope you will keep it up."

I remember the sadness I felt when the great dirigible crashed.

Did I go on to become a signalman? No; but I was a cryptographic security officer in World War II, where I never had the opportunity to use my early knowledge of the Morse code.

John C. Prentice

Glendale, Arizona

Shenandoah Legacy

Bravo on your selection of James Wensyel's article on the wreck of the *Shenandoah* for your February cover story.

My own research into this tragedy appears in the recently published book *Scraps of Paper: The Disarmament Treaties Between the World Wars* [Media Publishing, 1989]. I believe it would have been well if Mr. Wensyel had made some reference to the long-range effects of the crash. It certainly was the proximate cause of the Morrow Board's investigation [board members, headed by Dwight W. Morrow, were appointed by President

Calvin Coolidge after the crash to study army and navy aviation]; and the three Omnibus Bills that followed were of critical importance in the development of both military and civilian aviation. The final legacy of the *Shenandoah* was that the cause of aviation was much advanced by the passage of these important laws.

The dream of the rigid airship did not quite end with the crash of the *Macon* in February 1935 [off Point Sur, California]. Public Law 75-528 (H.R. 9218) passed May 17, 1938, authorized the navy to build one final airship "... at the discretion of the President ... \$3,000,000 to be expended ... for the construction of a rigid airship of American design and American construction of a capacity not to exceed three million cubic feet." President Franklin D. Roosevelt was in an economy mood, and put the project on hold, permanently as it turned out. One can only speculate what effect a successful airship, equipped with radar and the twin wasp engines of the 1940s, might have had on the evolution of today's aviation. Sadly, we will never know.

Harlow A. Hyde

Lincoln, Nebraska

Enjoyed Walker Article

Thank you for the very interesting article about William Walker's rebellion ["El Presidente Gringo," February issue]. His really was a household name.

History is a thrilling thing to study. One thing that I have found through looking at the past is that, while technology has advanced over the last century, people remain the same now as they were then.

Dona Wilson

Vestal, New York

The editors welcome comments from our readers. While we endeavor to publish a representative sampling of this correspondence, we regret that limited space prevents us from printing every letter. Address correspondence to The Mailbox, American History Illustrated, Box 8200, Harrisburg, PA 17105. ★

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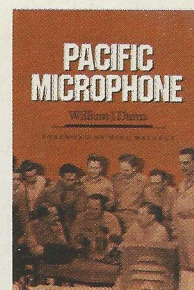
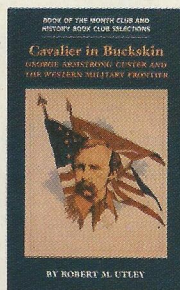
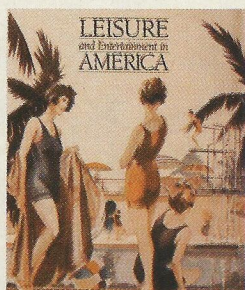
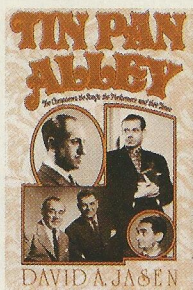
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History Bookshelf



American History Sourcebook: A Comprehensive Guide to Museums, Libraries, Archives, Photo Collections, Historical Societies, and Other Sources of Information on U.S. History, Politics, and Culture edited by Joel Makower (*Prentice Hall Press, New York City, 1988; 548 pages, illustrated, \$22.95 paper*).

Here is an impressive collection of historical resources-at-a-glance for researchers, editors, writers, and students. More than three thousand history-related institutions and organizations, listed in alphabetical order state-by-state, range from the Coca Cola Museum to the American Nudist Research Library to Davy Crockett's cabin. The volume also contains information on map collections, oral history archives, audio and video materials, government documents, and numerous other little-known historical resources. Each entry includes the resource's complete name, address, telephone number, hours and dates of operation, any admission or research fees, and a brief description of holdings.

Tin Pan Alley: The Composers, the Songs, the Performers, and Their Times by David A. Jasen (*Donald I. Fine, Inc., New York City, 1988; 312 pages, illustrated, \$21.95*).

In this book, David A. Jasen chronicles the central role played by Tin Pan Alley (the publishing business that hired composers and lyricists on a permanent basis to create songs) during the "golden age" of popular music. The narrative covers the period from 1886, when the Alley's first hit was published, to the mid-1950s, when Elvis Presley marked the beginning of the end of the Alley's influence

on this art form. He profiles the show business personalities that shaped Tin Pan Alley, including Leo Feist, Harry Von Tilzer, Jerome Remick, Oliver Ditson, the Mills Brothers, Scott Joplin, Frank Sinatra, Ethel Merman, and Irving Berlin. Anecdotes bring these legendary figures to life, and photos and song sheet covers add a nostalgic touch.

Leisure and Entertainment in America by Donna R. Braden (*Wayne State University Press, Detroit, 1988; 367 pages, illustrated, \$45.00 cloth, \$24.95 paper*).

While much has been written about the history of work and the work place, historians have paid less attention to the evolution of leisure-time activities. In this comprehensive study, author Donna Braden traces the changing nature of leisure in America, focusing on the early nineteenth to the mid-twentieth centuries. Areas documented include the history and development of community gatherings, public entertainment, home amusements, sports activities, and travel and tourism. Hundreds of illustrations, drawn largely from the collections of the Henry Ford Museum & Greenfield Village in Dearborn, Michigan, add to the book's interest.

Cavalier in Buckskin: George Armstrong Custer and the Western Military Frontier by Robert M. Utley (*University of Oklahoma Press, Norman and London, 1988; 226 pages, illustrated, \$19.95*).

This book on George Armstrong Custer examines both the man and the myths that surround him. Custer first appeared as the "Boy General" of Civil War fame, proving a superlative combat leader despite

his youth. He is better remembered, however, for his later roles with the frontier army as an Indian fighter, hunter, cavalier, and author. Custer's "last stand" at Little Big Horn—usually seen as a reckless sacrifice of troops in a quest for glory—Utley views as a "disaster attributable to bad luck and failed subordinates." The author portrays Custer as a man of contradictions, revealing his little-known obsession with money, which fueled shady business deals and possibly fraudulent kickback schemes. This biography offers a complete, realistic look at a complex historical figure now shrouded in legend.

Pacific Microphone by William J. Dunn (*Texas A & M University Press, College Station, 1988; 399 pages, illustrated, \$19.95*).

Almost a year before the Pearl Harbor attack, the Columbia Broadcasting System sent reporter William Dunn to the Orient to evaluate broadcast facilities for coverage of anticipated hostilities. In Rangoon, Burma he learned that America was at war. After moving to Batavia to report on the fall of the Netherlands East Indies, he fled to Australia. Then joining General Douglas MacArthur's staff for the duration, he covered air, land, and sea battles, campaign planning, and the liberation of internment and POW camps. By then a well-known correspondent, Dunn attended the signing of Japan's surrender documents. Based on Dunn's memories and transcripts of his broadcasts from the field, this book presents a unique account of the difficulties encountered in providing radio coverage of a war that encompassed half the globe. It also offers some interesting insights into the Pacific campaign and those who fought it.

History Today



Johnstown Flood Centennial

The 1989 Johnstown Flood Centennial commemorates not only the mighty flood that devastated the western Pennsylvania town on May 31, 1889, but also the determined city's dramatic recovery. Theme for the year-long calendar of events is "A Triumph of the Human Spirit."

Johnstown officials expect tens of thousands of visitors and former area residents to attend the centennial observances. Visitors are encouraged to make their first stop the new welcome center in Johnstown. (Although it is already open, dedication ceremonies will take place May 27.) Here guests can obtain information for their visit to the area, including listings of events and locations of restaurants and lodgings. A National Park Service pictorial history exhibit is also on display there.

The Johnstown Flood Museum in downtown Johnstown has undergone extensive restoration in conjunction with the centennial. Major new exhibits include a film that sets the historic scene; photographs showing the city before, during, and after the disaster; displays documenting the flood's rampage; and numerous flood-related artifacts. The new museum will open daily as of mid-May; dedication ceremonies are scheduled for May 31.

A memorial vigil will take place on May 30, the eve of the flood's centennial, in remembrance of the more than two thousand flood victims.

A new visitor center and museum opens May 31 at the Johnstown Flood National Memorial, located eight miles east of Johnstown at the site of the South Fork Dam. The failure of this earthen dam caused the catastrophe. Administered by the National Park Service, the new center features exhibits depicting Lake Conemaugh and the dam before and after it gave way. A film will dramatically and emotionally re-create the disaster; the footage is accompanied by what Park Service officials term a spectacular audio track approximating the sounds residents heard as the great wall of water and debris smashed through the flood area. A fiber-optic map with lights will depict the course of the flood from the time the South Fork Dam gave way until the water struck Johnstown, and a stage setting in the lobby will depict the mammoth wall of debris created. A walking trail will provide access to the north abutment of the dam.

Other area events will include a historic train ride from the Johnstown Flood National Memorial to Johnstown, following the path of the flood wave through the Conemaugh River Valley on the afternoon of May 31, 1889; Volksmarches June 17-18 and October 14-15; and a street carnival July 1-2. Additional activities throughout the year will include walking tours, lectures, music, dance, drama, and art displays and craft shows.

For more information, write: Johnstown Flood Centennial, 319 Washington Street, Johnstown, Pennsylvania 15901, or telephone toll-free 1-800-34-FLOOD. ★

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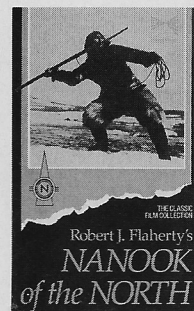
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Sight & Sound



Korea: The Forgotten War (Media Home Entertainment, Inc., 5959 Triumph Street, Commerce, California 90040, toll-free 800-645-8900; VHS or Beta, 92 minutes, \$29.95 plus \$3.95 shipping/handling).

This remarkably clear studio-quality film is comprised entirely of Korean War combat footage never before seen by the public. Some of the material was captured from North Korean forces and preserved in U.S. military archives. Robert Stack's detailed narrative is enhanced by computer graphics explaining troop movements and battles. The film begins with an overview of the war's background: 1943 Cairo Conference and 1945 Potsdam Conference agreements that led to the conflict in which fifteen United Nations member forces battled North Korea and her allies for three-plus years following the June 1950 Communist invasion of South Korea. Ironically, this "police action" that cost more than two million lives ended with a "stalemate truce" (here called the "last tribute to appeasement") leaving both sides exactly where they had begun.

Rose Kennedy: A Mother's Story (Films for the Humanities, P.O. Box 2053, Princeton, New Jersey 08540, 800-257-5126; VHS or Beta, 46 minutes, \$29.95; call for pricing of educational packages).

Rose Kennedy is part of an aristocratic family that shaped history. Her Irish immigrant father, John F. "Honey Fitz" Fitzgerald, was a Boston mayor. Although Rose had great ambitions sparked by her fascination with history and politics, her father denied her the Wellesley

College education she sought, sending her instead to a Catholic school. Ironically, she calls this her greatest regret. In 1914 Rose married an up-and-coming banker named Joseph P. Kennedy, and a "dynasty" took root. The tragic early deaths of four of her nine children (eldest son Joseph perished in World War II; Kathleen died in a plane crash; John and Bobby were assassinated) and the institutionalization of a retarded daughter have made agonizing demands on Rose's enduring faith. The matriarch appears in television interviews throughout the film. Featured are photos of the two families plus Kennedy home movie footage. Rose also talks viewers through a "tour" of the family's restored Beals Street home in Brookline, the Boston suburb where the Kennedy children grew up. At nearly one hundred years of age, Rose provides an intimate view of the Kennedys and the events that shaped and were shaped by them.

The Immigrants (Jeffrey Norton Publishers, On The Green, Guilford, Connecticut 06437-2635, 203-453-9794; six audio cassettes of about 60 minutes each, \$69.00/set or \$13.95 each).

An immigrant/author conducted interviews with eleven other immigrants to America, and the result is this fascinating audio collection of informal conversations that paint a vivid portrait of turn-of-the-century life. Most of these men and women arrived from Europe, Asia, and the Americas during the peak of immigration between 1900 and 1920. Each tells a poignant story of why he or she left home to resettle in the United States, and recounts

experiences in the new land. For example, a Russian immigrant recalls being charged for accidentally snipping a pair of pants he was assembling in a clothing factory in Chicago in 1908, and a Chinese man describes the prejudice he encountered in San Francisco. (Despite such treatment, none of the "new" Americans in this collection regret their choice.) Thick accents hamper some of the stories, but the interviewees become very real to the listener.

Nanook of the North (Home Vision, P.O. Box 800, Concord, Massachusetts 01742, toll-free 800-262-8600 or 617-879-1720 in Massachusetts; VHS or Beta, 65 minutes, \$29.95).

This classic 1922 film of Eskimo life resulted from explorer Robert Flaherty's years among the Nanook, a group of natives on the eastern edge of Hudson Bay in Canada. One Nanook, "The Bear," his family, and a small band of followers here battle for survival in their formidable frozen wasteland. The silent film (with an eerie musical soundtrack added) depicts "Nanook" and his group traveling to a trading post to barter pelts, traversing dangerous ice floes, hunting fish, walrus, and seal, building igloos, and interacting in work and play. The family's belongings consist of a few bear and deerskin robes, a stone pot, and stone lamps. In one almost comical scene, six or seven Eskimos, including Nanook's mate and four-month-old baby, emerge from a kayak that looks scarcely large enough for two. While Nanook's daily life appears truly remarkable, creating this film in the 1920s was no small feat itself. ★

Bookshelf

From Pittsburgh to the Rocky Mountains: Major Stephen Long's Expedition 1819-1820 edited by Maxine Benson (*Fulcrum Inc., Golden, Colorado, 1988; 410 pages, illustrated, \$20.00*).

In 1819 Major Stephen Long led a party of naturalists, topographers, and artists on a two-year expedition, sponsored by the U.S. government, to explore the "Great American Desert"—the region stretching from the Mississippi River to the Rocky Mountains. Samuel Seymour and Titian Ramsay Peale, the artists who accompanied Long, were the first to participate in a major western expedition. Many of their sketches, some of which were not in the 1823 edition of the Long expedition report, are included in this illustrated reprint. Abridged to a one-volume edition, the book serves as an excellent introduction for the general reader.

The Pueblo Surrender: A Covert Action by the National Security Agency by Robert A. Liston (*M. Evans and Company, Inc., New York City, 1988; 294 pages, \$18.95*).

A re-examination of the 1968 seizure and surrender of the USS *Pueblo* off North Korea, this book presents the author's thesis that the intelligence-gathering ship was deliberately surrendered in a secret mission planned by the National Security Agency (NSA). Liston says that the *Pueblo* was purposely unarmed so that its crew could not defend themselves, and that the NSA secretly planted a rigged U.S. code machine aboard the ship to induce the North Koreans to capture and use the equipment so that Americans could break the Soviet code system. He claims the NSA not only deluded the American people, but also the White House, Pentagon, and Congress. Liston characterizes the *Pueblo* surrender as the greatest intelligence coup of modern times, preventing a massive U.S. defeat in the Tet Offensive in Vietnam, revealing Soviet contingency plans for an invasion of China, and leading directly to rapprochement between China and the United States. ★

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One hundred years ago a thirty-foot-high wall of water swept through Johnstown, Pennsylvania, killing more than two thousand people and carrying much of the city into oblivion.

The Johnstown Flood

by Edward Oxford

FRIDAY MORNING, May 31, 1889 dawned dark on Johnstown, Pennsylvania. The rain that had drenched the city and surrounding region all night continued almost without letup.

Residents of the iron and steel manufacturing center, located at the juncture of two rivers in a deep Allegheny Mountain valley, had survived other heavy spring rains in recent years—particularly in 1885, 1887, and 1888. They knew what such storms portended: water saturating the logged-off mountainsides, rivers rising, overflow pouring across the city's streets, into yards, and up the front steps. Floods were a familiar fact of life in Johnstown. But this downpour—more than six inches in twelve hours—was the heaviest local residents could recall.

By 7 A.M. Main Street lay under three feet of water as the Little Conemaugh River and Stony Creek overflowed their narrow banks. The ironworks and factories closed. Neither the milkmen nor the mailmen made deliveries. At a funeral, mourners were forced by rising waters to leave the departed's casket at the altar.

Homeowners attempted to seal the cracks around their cellar doors. Wives moved canned fruit, jams, and pickles to higher shelves. In one household, six family members managed to hoist a piano onto four chairs.

There were seventy telephones in town, and people kept ringing the "hello bells" to talk about the roiling waters.

Johnstown moved upstairs as the day wore on, as with resignation families rolled up parlor carpets and carried furniture to the second floors of their homes. Their lives were disrupted, but most townspeople remained calm. Although wary of the en-



Occupying a flood plain at the juncture of two Allegheny Mountain streams, Johnstown and its surrounding boroughs had a population of about thirty thousand in 1889. In this panoramic pre-flood view looking northwest across the western Pennsylvania valley town, smoke and steam issue at far left from the Cambria Iron Works—the region’s major employer. Church spires at right mark Johnstown’s central district. Stony Creek winds across the foreground; the Little Conemaugh River (not visible) passes from right to left between the city and the hills beyond.

bottom of the deepest “hole” in that part of the Allegheny Mountains. It had become a matter of pride for these hard-working people to hold their ground against the floods. Johnstown was theirs—come hell or frequent high water. But even the bravest among them recognized the dark fact that should a truly vast flood ever descend upon Johnstown, they could do little but pray for deliverance.

By 3 P.M., in house after house, water filling the first floor began to rise to the second story. More than a few of the residents began to wonder whether the old South Fork Dam would hold.

The Damnable Dam

Townsfolk, few of whom had actually seen the dam, perhaps thought of it much as those citizens of Pompeii who had lived at the foot of Mount Vesuvius in A.D. 79 had thought of the sleeping volcano. It could deal them death, but it never had before. Why would it harm them tomorrow?

Spanning a mountain pass eight miles northeast of Johnstown, the earthen-work structure loomed more than seventy feet above the bed of the South Fork Creek of the Little Conemaugh River. The dam measured nine hundred feet in length with a base 270 feet thick.

Its lumpy dirt and rock wall held back Lake Conemaugh, two miles long, a half-mile wide, and reaching depths of more than seventy feet. Estimates put the

croaching waters, they assumed that, as in the past, the flood would soon retreat from their doors.

But by midday, people were *not* so sure. In the noon-time gloom, they looked down anxiously from second- and third-story and attic windows, observing more and more water rushing into the streets from Stony Creek and the Little Conemaugh River. Families on foot and in wagons pushed through the water, moving toward high ground.

The “rule of thumb” had it that three inches of rainfall in the mountains meant a flood of three or more feet in Johnstown. During the night a bucket near the South Fork Dam had caught eight inches of rain.

Johnstownners who knew about it were troubled by the thought that, geologically speaking, they lived at the



weight of the water behind the dam at about twenty million tons. "A mighty body of water," as one Johnstown man stated, "to be up there on the mountains." If the dam ever gave way, no earthly force could stop the water from rampaging into Johnstown, which, at a 1,200-foot elevation, lay more than four hundred feet below the lake.

The South Fork Dam was a remnant from the picturesque canal boat era. The earthen mound had been built at mid-century to provide a year-round supply of water for the canal linking Johnstown and Pittsburgh, the booming steel-making city sixty-five miles to the west. Built to the highest standards, the project took fifteen years and \$166,000 to complete. But the lake had barely begun to send water into the canal when the Pennsylvania Railroad pushed its first tracks through the mountain gaps; the dam and reservoir were outmoded from the onset.

The railroad bought the dam, only to let it molder in the mountains, a victim of time and weather. A spring storm in 1862 washed out a two-hundred-foot section of the wall, leaving the dam high, almost dry, and saddle-shaped in the middle.

Congressman John Reilly bought the broken dam and the dried lake bed. Then, to make some money on salvage, he removed the five huge cast-iron discharge pipes embedded in the dam's base and sold them for scrap. The dam was left with a 274-foot-long hole through its base.

The Millionaires' Club

Benjamin Ruff of Pittsburgh—a successful coke salesman, real estate broker, and construction contractor, saw in the abandoned lake site a fine setting for an exclusive retreat—perfect for Pittsburgh's wealthy. The city's aristocrats of business and industry might relish an Allegheny Mountain Shangri-La where they could retreat from Pittsburgh's grime and smoky air.

So, unbeknownst to Johnstownians, a group of Pittsburgh millionaires formed in 1879 a South Fork Fishing and Hunting Club. In the club's name, Ruff bought the dam site and the lake bed. The members filed their charter, not as the law required in Cambria County where the property was located, but as they preferred in Pittsburgh, in Allegheny County.

During the next two years Ruff presided over the restoration of the old dam. To his lasting disgrace—and that of the club members—he turned in a construction effort that was ill-conceived, shabbily executed, and fatally flawed. A meager twelve thousand dollars was spent on the work.

Ruff never consulted a professional engineer during the mammoth rebuilding task. Instead, he hired a muleskinner. Ruff sought him out not for his construction skills (even Ruff had more) but rather for the use of his mules, wagons, and laborers. Under Ruff's guidance, the mulemen dragged dirt to the dam site, dumped it in, and stomped it down. Former railroad workers

helped them cover the face of the dam with stone “rip-rap.” In accord with the club members’s wishes, Ruff was building not for the ages, but for economy.

Ruff did not bother replacing the overflow discharge pipes in the base of the dam. Instead, the master builder ordered the workers to fill the discharge tunnel with a giant plug of dirt, tree limbs, rocks, and other rubble. By so doing, they sealed the base of the dam and, in a sense, Johnstown’s doom.

Ruff’s sorry spectacle continued for nearly two years—the mound-builders piling rocks, hemlock bows, stumps, hay, brush, and mud upon the sides of the embankment, forming thicknesses that seemed, to their inexperienced eyes, more than strong enough to hold back the huge lake that had formed behind the dam.

But valley dwellers worried. “We were afraid of that dam,” a Johnstown man later recalled. “No one could see the height to which that dam had been built, without fearing the power of the water behind it.”

Daniel J. Morrell, head of Johnstown’s Cambria Iron Company, was one resident who wanted to know more about the shadowy doings at the dam. In November 1880 the ironmaster dispatched John Fulton, one of his best engineers, to examine the work-in-progress. Fulton’s report pinpointed two alarming defects in the dam: there were no discharge pipes in the base, making it impossible to drain the lake for repairs should they be required; and leaks already showed in the embankment.

Morrell contacted the club president, pointing out the defects and offering to share in the cost of righting them.

“Very respectfully,” Ruff *disrespectfully* responded to Morrell: “. . . you and your people are in no danger from our enterprise.”

Club members, numbering sixty-one by spring 1889, thought their private summer resort was splendid—all that Ruff had promised. There Pittsburgh’s noted and powerful, among them Andrew Carnegie, Henry Clay Frick, Andrew Mellon, Philander C. Knox, and Henry Phipps, Jr., could, with their families and friends, find tranquility and relaxation on Lake Conemaugh, in the forty-seven-bedroom clubhouse and sixteen gracious, mansion-like Queen Anne “cottages,” and in the surrounding woodlands.

Had an experienced civil engineer been asked to assess the dam’s strength at this time, he would have come away shaken.

By 1889 the club’s management had trimmed the dam’s crest by three feet to create a road wide enough for two carriages to pass. But this reduction also meant that a fast-rising lake, overflowing the spillway at the north abutment, could reach the top of the dam much sooner than before. The club had also installed a screen of iron rods across the spillway to prevent the lake fish from escaping into the creek below. Club members did not consider that during heavy rains the screen might fill with branches and debris, clogging the outlet. Finally, the top of the dam had sagged one to two feet in the center—a vestige of the washout a quarter-century be-

fore. Not much rain would be needed to edge water over the crest.

“People wondered why the dam was not strengthened,” remembered a Johnstown citizen later. But “by and by they talked less and less about it.”

A dour caretaker named Herbert Webber felt it wrong that a dam with two miles of lake behind it should endanger an entire city below. He expressed this opinion to a few of the wealthy club members. They assured him “it was built to last for centuries.” When Webber continued his warnings, he was advised: “Shut up or you’ll be bounced.”

The members, many of them rich beyond care, took their summer paradise for granted. They lived there until season’s end, then closed their cottages and headed back to their Pittsburgh estates. They paid scant attention—and even less in upkeep money—to the care of the dam. Like the people who lived in the winding valley below, and those in the Johnstown flood plain beyond, the club members assumed that if the dam held yesterday, it would hold today. And if it held today, it would hold tomorrow.

The Breakthrough

All morning on May 31, 1889, cloudbursts drenched the mountains. Feeder streams roared into Lake Conemaugh like millraces.

Colonel Elias J. Unger, the fifty-nine-year-old club manager, awoke to find the lake the highest it had ever been—and rising another inch every five to ten minutes. At the center of the dam, the water was just a few feet from the top.

Unger knew there were no longer any discharge pipes in the dam, no way to lower the level of the lake. He thought he might be able to slow the water’s rise by lifting the iron gratings that blocked the sluiceway on the northern abutment. But doing so would release many of the lake’s fish. He hesitated. If the rain stopped, Unger would have to explain to the members that he had ruined their forthcoming summer’s fishing. He decided to wait.

At 10 A.M. Unger ordered about twenty workmen to attempt cutting a new spillway through the shale hillside at the dam’s south abutment. But using picks and shovels, they could barely scratch out a shallow channel. It was much too little, much too late.

Other workers, meanwhile, plowed the dirt at the dam’s crest in an effort to raise a narrow dike there. The surface of the lake reached the barrier even as they dug.

Unger accepted the inevitable. At midday he dispatched John G. Parke, a young man who worked at the club, to ride to South Fork, two miles downstream,

Recommended reading: The classic popular account of this tragedy is The Johnstown Flood by David G. McCullough (Simon and Schuster, 1968). An interesting pictorial work is The Johnstown Flood of 1889: The Tragedy of the Conemaugh by Paula and Carl Degen (Eastern Acorn Press, 1984).



and warn the people there that the dam was about to break. Parke raced to the village and urged the residents to move to higher ground.

At 12:30 P.M. the South Fork telegraph office sent a message down the valley: "South Fork Dam is liable to break; notify the people of Johnstown to prepare for the worst." During the next two hours, two more alarms flashed through the lines.

The warnings had little effect in Johnstown. Few residents apparently learned of the messages. And most people who could retreat beyond the waters' reach had already done so. Those held prisoner in their homes by the flooding couldn't do much but wait and hope—warnings or no warnings.

By 1 P.M. water was spilling over the dam's crest and down its outer face. Unger at last gave the order to lift the spillway gate; he knew that despite the potential loss of fish he had to open the spillway. The workers tried, but the heavy iron gates, choked with nearly a decade's accumulation of debris, wouldn't budge.

Standing in the pouring rain, Unger and the workmen helplessly watched the water pour over the dam.

At about 2:45 P.M. the center of the dam face, undermined by the down-flowing water, began to sink into the earth. Within ten minutes, a twenty-foot-wide fissure

A catastrophe in the making: the South Fork Dam (above) spanned a tributary of the Little Conemaugh River about fourteen miles upstream from Johnstown. Measuring more than nine hundred feet long and about seventy-two feet high at the center, the earthen-work structure impounded Lake Conemaugh, a summer retreat for Pittsburgh's wealthy elite. The dam had been restored during 1879-81 by the South Fork Fishing and Hunting Club on the site of an abandoned canal reservoir project, but safety features the original builders had included were omitted by their successors.

opened in the wall's lower half.

The final break came at about 3:15 P.M. The mound gave way with a boom like rolling thunder. The breach in the dam was more than four hundred feet wide at the top. "The dam didn't break," Parke later said: "It simply moved away."

Trees, boulders, and earth shot skyward. Lake Conemaugh poured down into the valley. A farmer watched helplessly from a hillside as the great wave engulfed his house. His wife and two children were inside; he never saw them again.

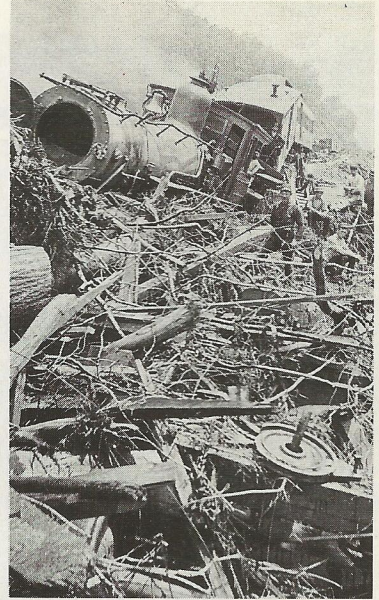
Chronology of a Catastrophe



BROWN BROTHERS, STERLING, PENNSYLVANIA

The flood's swift current carries a huge mass of wreckage and hundreds of victims downstream as far as the stone railroad bridge spanning the Conemaugh River near the Cambria Iron Works. There the debris forms a thirty-acre jam, temporarily damming up the river and leaving Johnstown streets submerged in nearly twenty feet of water. At about 6 P.M. the wreckage catches fire. It burns for two days; about eighty trapped victims die in the funeral pyre.

BROWN BROTHERS, STERLING, PENNSYLVANIA



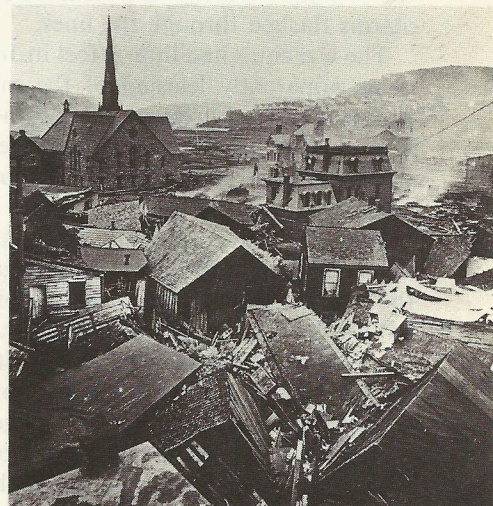
Train engineer John Hess races into the Pennsylvania Railroad's East Conemaugh yards just ahead of the flood wave, sounding the alarm with his locomotive whistle. He abandons the engine and reaches safety, but the water engulfs two passenger trains marooned in the yards, killing nearly two dozen passengers.

Sweeping through the Cambria Iron Company town of Woodvale, the flood wave destroys 255 homes and kills more than three hundred people.

Miles of barbed wire are added to the thousands of tons of debris when the flood engulfs the Gautier Steel Company.

The twenty-million-ton avalanche of water, pushing a thirty-foot-high wall of churning debris ahead of it, reaches Johnstown at about 4:07 P.M. In ten awesome minutes the wave sweeps across the city, shattering and destroying thousands of homes and hundreds of businesses, and killing nearly two thousand inhabitants.

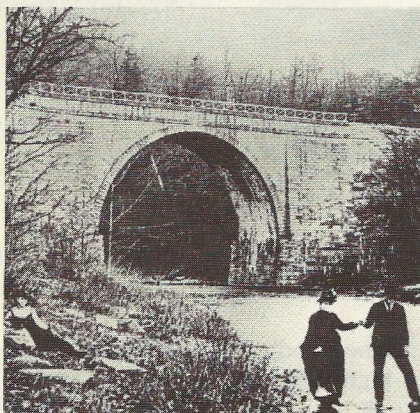
LIBRARY OF CONGRESS



5

Crashing through Mineral Point, the wave sweeps away twenty-six of the hamlet's thirty-two homes, killing sixteen inhabitants.

Two miles below South Fork, the wave increases to more than seventy feet in height as the valley narrows and makes a horseshoe bend. Wreckage carried by the flood clogs the archway of a railroad viaduct spanning the canyon, briefly containing the roiling waters. But the pressure is too much for the seventy-five-foot-high stone bridge; it collapses, and the flood resumes its rampage toward Johnstown.



LIBRARY OF CONGRESS

4

Two miles downstream, the forty-foot-high wave of water and debris reaches the Little Conemaugh River. Sweeping through portions of the village of South Fork, it destroys thirty buildings and kills four people. Then the torrent drops westward down the river at speeds of up to forty miles per hour, scouring the valley floor clear of trees, vegetation, and railroad tracks.

3

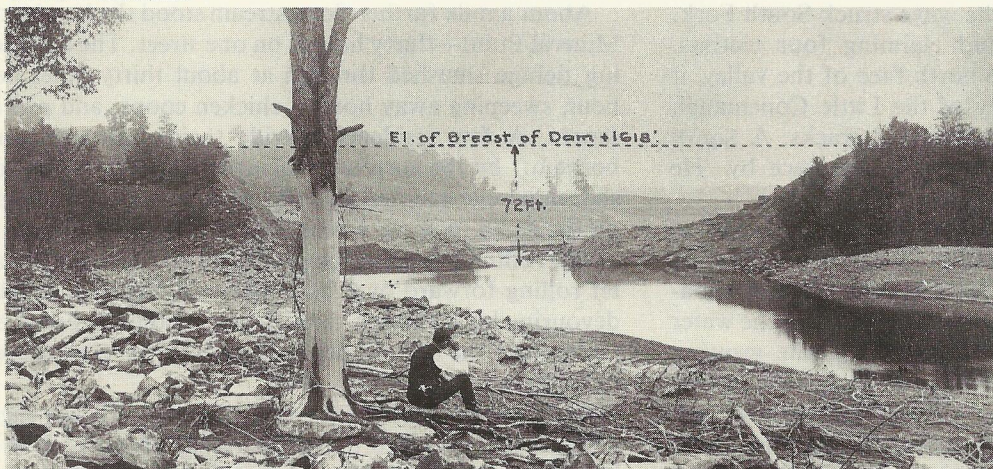
Despite frantic efforts by club managers and workmen to ease pressure on the dam, the lake level continues to rise. By 1 P.M. water begins to spill over the crest and down the outer face of the structure. At about 3:15 P.M. the dam suddenly fails, and lake water pours through the four-hundred-foot breach with the force of Niagara Falls.

2

1

On Memorial Day evening, Thursday, May 30, 1889, heavy spring rains begin to fall in the Allegheny hills surrounding Johnstown, Pennsylvania. The downpour continues all night. By the morning of May 31 eight inches has fallen at Lake Conemaugh, a summer retreat for wealthy members of the South Fork Hunting and Fishing Club. The two-mile-long lake, located in the mountains eight miles northeast of Johnstown, rises rapidly. By noon water is lapping at the top of the South Fork Dam, a nine-hundred-foot-long, seventy-two-foot-high earthen-work rampart.

JOHNSTOWN FLOOD MUSEUM





Onrush

What happened next was the rough equivalent of turning the full force of Niagara Falls loose upon the valley below the dam for about forty minutes. The water cascaded through the sundered mound and became a fast-moving wall forty feet high.

The vast tide was, to those who beheld it, "like a mountain coming," "loud and terrible," and "a large hill rolling over and over." The cauldron surged down the South Fork valley, churning within itself chunks of the dam, trees, and boulders.

Two miles downstream, the wave struck South Fork, destroying thirty homes and claiming four victims. Then, rebounding from the north face of the valley, it spilled west down the valley of the Little Conemaugh and along the Pennsylvania Railroad tracks. A South Fork church pastor watched the deluge race by. He prayed: "God have mercy on the people below."

At times the flood wave moved downstream as fast as forty miles per hour. It tumbled locomotives end over end, swept buildings and bridges from their foundations, and crushed whatever lay in its path. As the water corkscrewed through the sinuous valley, the growing mass of wreckage at the crest of the wave slowed its progress. Where the valley walls grew narrower, the mass built to a height of up to seventy feet and nearly came to a standstill. Given clear passage, the flood would have gone the fourteen miles to Johnstown in

about twenty-five minutes, at speeds of up to sixty to ninety miles per hour. Instead, it took almost an hour to reach the city.

For a few minutes the flood wreckage piled up against a seventy-five-foot-high railroad viaduct that spanned the Little Conemaugh at a narrow bend in the valley. Mangled railroad cars, shattered houses, and planks, timbers, and tree stumps clogged the stone archway. What had been Lake Conemaugh briefly formed again, five miles downstream from its original resting place. Then the wall of water collapsed the viaduct and exploded through the gap, its momentum regained.

About a mile farther downstream stood the hamlet of Mineral Point—thirty houses on one street. The advancing deluge smashed through at about thirty miles per hour, sweeping away homes, chicken coops, and picket fences. A few residents, astride their rooftops, were borne off by the current. When the waters had passed, sixteen people had perished and there was hardly a mark on the earth to show where Mineral Point had been.

The roiling mass continued to grow in density, the water rolling forward over itself like surf hitting a beach, devouring logs, stumps, and telegraph poles. It bounced bodies into the air and drove some into the mud, never to be found.

As the wave neared East Conemaugh, railroad engineer John Hess raced down the tracks ahead of it in a locomotive, alerting residents by tying his whistle down. Hess jumped clear in time to escape, and his gallant



warning saved many. But fifty people died, including some two dozen passengers on trains stranded near town. The wave ripped apart the string of railroad cars, said one witness, "like the hands of a giant."

The one thousand residents of Woodvale, farther down the valley, received no warning at all. In five minutes their town and one-third of its population were gone. About 250 houses were destroyed. Not a tree, telegraph pole, or house foundation was left.

When the Gautier Steel Company, a few hundred yards outside Johnstown, was struck by the churning waters, miles of barbed wire were hurled into the maelstrom. The factory's boilers exploded, creating a dense, black mist over the roaring waters.

The Fury

That cloud of dark spray visible above the wave signaled the flood's advance on Johnstown. A young man who survived the tragedy said that "the water coming looked like a cloud of the blackest smoke I ever saw."

The wave arrived at the city at about 4:07 P.M.. And by about 4:17 P.M. it had wreaked devastation upon Johnstown and the surrounding boroughs; death upon two thousand of their residents; and shock upon America.

The wave was as much an avalanche as a flood. Like an Apocalyptic nightmare, twenty million tons of water swept along a hundred thousand tons of wreckage—

Johnstown after the deluge: emerging from the gap at right center, the thirty-foot-high wave of water and debris created by the failure of the South Fork Dam swept through the city in several block-wide paths.

"In an instant the deserted street became black with people running for their lives," said one who watched from a hillside. "An instant later the flood came and licked them up with one eager and ferocious lap. The whole city was one surging and whirling mass of water, which swept away house after house with a rapidity that even the eye could not follow. The course of the flood was as unreasoning as the freaks of a madman. . . . A part of the wave seemed disposed to follow the course of the stream while the other part was intent on dashing into and through the heart of the town."

rocks, logs, trees, barns; the detritus of flour mills, wireworks, railroad yards; a battering ram of bridges, cable reels, boilers, locomotives, freight cars, fifty miles of railroad track, pig iron, telegraph poles, farm machinery, coils of barbed wire, brick, stone, mortar, timber, parts of the shattered dam, dead horses, cattle, dogs, and what had been human beings. Grinding over the city like a malevolent glacier, with a roaring, crushing sound, the mass obliterated the houses, stores, and streets in its path.

Hundreds watched in horror from the hills. One man



Survivors seeking to return to their homes and businesses on the morning after the flood found whole streets and blocks swept clean of every trace of habitation, while other areas (like Main Street, above) were choked with flotsam and debris. "Everything about us was in inextricable confusion," wrote Reverend David Beale, "showing the effects of the terrific convulsion through which nature and humanity had passed. Here were uprooted trees, houses upturned or demolished, furniture of every description—hardware, woodenware, parlor ornaments and kitchen utensils, mattresses, bodies of horses, cattle and swine, corpses of men, women, and children, railroad cars and locomotives—overturned or on end, and pressing down upon the half-buried bodies of the drowned."

recalled that "the deserted streets became black with people. An instant later the flood came and lapped them up with one eager and ferocious lap. The whole city was one surging and whirling mass of water. . . ."

Rebounding off the hillsides, and turned aside by some of the stouter buildings (including the Methodist Church at Locust and Franklin streets), the flood wave

cut block-wide swaths through the city. It engulfed the homes of rich and poor alike, stores, churches, the opera house, and the fire station. Scores of houses were swept away in the raging current, many with families clinging to the rooftops.

George Gibbs, assistant editor of the *Johnstown Tribune*, watched from the second floor window of the newspaper building: "Johnstown was tumbling all over itself. Houses at one end nodded to houses at the other. The waters came forth to meet, embrace, and crush them. Then on sped the wreck, shaking with rage—crushing, grinding, pulverizing all."

In a parsonage attic, Reverend H.L. Chapman, his wife, and several neighbors huddled in silence, hoping the house wouldn't go. "I would think none was afraid to meet God," he later wrote, "but we all felt willing to put it off until a more propitious time."

Horace Rose, his wife, and their three children looked out from the second floor of their house. He saw "stretching from hill to hill a great mass of timber, trees, roofs, and debris of every sort, advancing toward me. I saw brick buildings crushed in and dashed from sight, while frame tenements were quickly smashed." Then the Rose home went down like a matchbox. Horace was caught under falling timbers, his right side

crushed, but he managed to crawl to the roof, upon which he and his family floated down the waters to safe haven.

Caught in the current, a man was held underwater by his suspenders, which had snagged on a log. He dug into his pants, pulled out a pocketknife, and cut himself free. Another man, stark naked, clung to a rooftop, calling out to the Almighty to save him. One woman stood upright on a section of floorboards, too terrified to move or cry out as she sped downstream. A man sprawled flat on the top of a spinning railway car. The rooftop of a mansion, gliding downstream, bore fifty people. In the attic of another flood-borne house a woman gave birth to a boy.

One family was seen riding a large section of roofing, its members methodically placing clothes into a Saratoga trunk. A surge of water hit their raft and plunged them to their deaths.

Sixteen-year-old Victor Heiser had been working in the family barn when the flood struck. He could see his father and mother in the second-story window of their house. His father motioned the boy to climb to the roof of the barn. Just then, the wave struck the house broadside. Clinging to the barn roof, Victor had a wild ride down the river. He never saw his parents again.

A storeowner, seeing the approaching wave, ran to the counter to get his cash box; the waters smashed through his window, drowning him where he stood. The Hulbert Hotel, the finest in town, had its roof ripped off; the rest of the hotel was destroyed, and fifty-one people died.

Reverend Dr. David Beale, pastor of the Presbyterian Church in Johnstown, pulled five people in from the flood waters through an attic window in the parsonage. He read aloud from the Bible: "God is our refuge and strength. . . . Therefore will not we fear, though the earth be removed, and though the mountains be carried into the midst of the sea . . ."

Morrell Swank's home was crushed like an eggshell. He carried his bleeding son, Roy, in his arms. The water pushed them up through a ceiling. He climbed out onto the roof. Roy was dead. Swank's wife, parents, brother, sister, and a servant girl were drowned.

A millworker named Maxwell McCachren saw six-year-old Gertrude Quinn hurtling by on a mattress, calling for help. As McCachren started to dive into the current, others tried to hold him back. The girl heard him tell them: "Do you think an angel from Heaven is coming down to help her?" McCachren went in after the girl. At times, he was swept under the water. Finally, he came up at the edge of her raft and climbed aboard. Then he tossed the crying child to a man—and safety—on the riverside.

Finally, in a startling crescendo, the wave of flotsam that had swept through Johnstown crashed against the big stone railroad bridge at the city's eastern edge and halted. The thirty-foot-high heap of wreckage—a grotesque array of smashed buildings, twisted fences, shattered houses—would soon cover some thirty acres.

Perhaps set off by live coals from stoves, fire broke out in the wreckage. It burned for three nights.

Those trapped in the pile-up reminded an onlooker of "flies on flypaper." An estimated six hundred people had been drawn into the burning heap; of these, some eighty perished in the pyre.

Valley of the Dead

Dawn the day after the flood disclosed a valley of death. Johnstown's remains lay mired in a sea of mud. About fifteen hundred houses had been swept away. Main Street was piled to the second-story windows with railroad cars, crushed houses, and debris—end to end, curb to curb.

People came down from the hillsides to search for the missing. Over two thousand had died. Almost a hundred families had no survivors. Nearly everyone left had been bereft of someone—a relative, a friend, a neighbor. The injured—cut, bleeding, dazed—numbered in the hundreds.

Whole streets were gone. Families tried to figure out where their homes had been.

At the stone bridge, rescue parties worked to free survivors trapped in the burning jam of debris. According to one account, volunteers trying to pull a nearly drowned woman from beneath the wreckage couldn't work her loose. They discovered that one of her submerged legs was locked in the grasp of a dead man. A rescuer cut off the corpse's hand, releasing the captive woman.

George Gibbs, the *Johnstown Tribune* editor, wrote: "Hands of the dead stuck out of the ruins. Dead everywhere you went, their arms stretched above their heads almost without exception—the last instincts of expiring humanity grasping at a straw."

The first requests to the outside world were not for doctors but for "coffins of all sizes." Within a week 125 morticians were in the city. Embalmers worked day and night.

The Johnstown dead were set out in makeshift morgues in schoolhouses, churches, the railroad station, a soap factory, and a saloon. Each corpse was given a number and placed in a temporary grave.

Hour after hour, people read the lists of descriptions pinned to the morgues' walls. At Morgue "B," for example, typical descriptions read: "Fitzharris, John. Age twelve. Gold watch. Empty pocketbook" . . . "Unknown, Female. Dark hair. Blue eyes. Gingham apron" . . . "Nugent, Mary Jane. Cash \$79.09. Rosary. Breastpin. Spectacle Case. Green Purse" . . . "Thomas, E.M. Bunch of keys marked with name. All but hips and lower limbs burned away" . . . "Unknown. Female. Foot only. Black stocking. High-button shoe."

If the body could be identified, it was moved to a chosen resting place. But hundreds of the dead went unrecognized. Unidentified bodies were placed into temporary graves. In time, these remains were exhumed and displayed to grief-torn husbands, wives, parents, chil-

“Not the Hand of Providence”

CRIMINAL NEGLIGENCE SUITS were filed against the wealthy members of the South Fork Fishing and Hunting Club, but to no avail. The club dissolved and left no assets.

To prove individual negligence was next to impossible; the likeliest culprit, Benjamin Ruff, had died two years before the flood. Besides, the clubmen were of the upper class. “It is almost impossible,” a flood survivor later said, “to realize how these people were feared.”

The club’s changes to the old South Fork Dam had been blatantly parsimonious and slipshod, but Pittsburgh judges ruled the dam’s failure an “act of Providence.”

The families of the lost in Johnstown did not so adjudge. To them, the political lackeys and faceless millionaires with high-priced lawyers had plainly been death-dealers. One tombstone at a gravesite read: “Family of N.J. Swank. Wife and four children. Drowned by the South Fork Fishing and Hunting Club. May 31, 1889.”

Although the Pittsburgh millionaires had taken their pleasure at their retreat in the mountains above Johnstown, they took little pity on the townspeople to whom their arrogance and disregard brought death and despair. Nor did they show a sense of honor. Only one, S.S. Marvin, was man enough to descend into the valley and lend a hand at the desolate scene.

Andrew Carnegie, along with a few other members, made contributions to the rebuilding of Johnstown. But measured against the magnitude of the

disaster—and the vastness of their wealth—their contributions seemed but a guilt-tinged pittance.

In the aftermath of the great flood, most of these rugged individualists of the business world stayed away from Johnstown. Perhaps they had heard that an angry band of valley men had stopped by the retreat—probably looking for a member or two to hang. The millionaires tried to dispel any trace of their connection with the club. To their last days the members of the club’s inner circle observed a conspiracy of silence concerning the events at Lake Conemaugh.

As it turned out, the money men never had to pay damages.

The horror of Johnstown brought into troubling focus the bitterness held toward the nation’s haves by the have-nots. Writes social historian David G. McCullough in *The Johnstown Flood*: “there were in 1889 strong feelings that perhaps not all was right with the Republic. . . . Was it not the lives of them [the steel magnates] that were bringing in the hun-kies, buying legislatures, cutting wages, and getting a great deal richer than was right or good for any mortal man in a free, democratic country?”

The people of Johnstown were left with a legacy of death—and the bitter lesson that law was one thing and justice another.

Fifteen days after the Johnstown flood, George Swank, editor of the *Johnstown Tribune*, would write: “We think we know what struck us, and it was not the hand of Providence. Our misery is the work of man.” ★

dren, and friends before being consigned to a final resting place.

Mrs. John Fenn, for instance, watched as a child’s body was brought up from its shallow grave. The girl had been buried just as she had been found, with the articles of clothing that showed a mother’s care, rings upon her fingers, and, in her pocket, a set of metal jackstones. Mrs. Fenn recognized the body as that of her nine-year-old daughter Genevieve, who, along with her father and six brothers and sisters, had been a flood victim. She then watched as Genevieve was reburied, glad to have at least seen her again. The family’s lone survivor had yet another sorrow to bear; she was pregnant but her baby was born dead.

Strong-of-heart though the survivors were, there was no way they could work out their salvation on their own. Of the city’s three hundred businesses, almost all had been destroyed. Twenty thousand people had lost their homes or possessions. Property damage was later estimated at about \$17 million—hundreds of millions by today’s measure.

Thirty-five-hundred Pennsylvania Railroad trackmen and carpenters toiled to rebuild the rail approaches to the city. Relief trains—carrying about fifteen hundred

carloads of food and clothing—rolled in from near and far.

As many as seven thousand relief workers were on the scene. The most noted among these was the indomitable Clara Barton. At age sixty-seven she stoically led a contingent of volunteers from her newly formed American Red Cross. She would later write of “the wading in mud, climbing over broken engines, cars, heaps of iron rollers, broken timbers, wrecks of houses; bent railway tracks tangled with piles of iron wires; among bands of workmen, squads of militia and getting around the bodies of dead animals, and often people being borne away—amidst the smouldering fires and drizzling rain.” The ministering angel and her workers labored in Johnstown for five months.

Along with those who rendered help came those who stood and watched. Curiosity-seekers poured into the city—some on special tours—to see workers dig up corpses, to pose with survivors, and to gather souvenirs. Pilferers and pickpockets also foraged among the ruins.

The flood was the biggest news story since the assassination of President Abraham Lincoln. Scores of reporters, photographers, and artists hurried to Johnstown. Many newsmen professed that “no pen can

A Voice from the Flood

YESTERYEARS for Elsie Frum are many and memory-filled.

Quick-minded, well-spoken, and strong-spirited at 106 years of age, Elsie is a folk heroine in Johnstown, Pennsylvania; she lived through the legendary flood of 1889.

"I can still remember that day," Elsie says. "Mother was in the house with me and my two little sisters. I was six years old at the time. One sister was four, the other was three."

Her father had a planing mill in East Conemaugh, two miles up the Little Conemaugh River from Johnstown.

"It was raining hard," she recalls. "It was a Friday. The day before we had all been to the big Memorial Day parade in Johnstown. My father marched in it. The weather was real sunny. After the big parade I even had an ice cream cone. But by Friday it was raining and dark out."

Elsie did not fear the heavy rain.

"Father was outside," she says. "There was talk the big dam might break. He was out looking to see how high the river was rising.

"Then he ran in. He grabbed my two sisters and me and he said, 'The dam has broken! Run!' So we all got out of the house and ran.



PHOTOGRAPH BY EDWARD OXFORD

"Father led us up a hillside. I could see the water on its way. It looked to me just a big body of water. I didn't know what it meant. What a flood was."

The wide-reaching water roared into and around the Frum house, but the big, three-porched structure held to its foundation. The flood swept on into Johnstown.

Elsie's father sent his wife and daughters out to the country. He stayed in town to make coffins for the flood victims. After a week, his family returned to their house to go on with their lives.

"I had some keepsakes," Elsie says, "but they got lost along the

way. In the flood of 1936, I believe."

Elsie's family refers to her as the "Queen Bee." A widow, she lives with one of her two daughters. She also has one son, eight grandchildren, fourteen great-grandchildren, and five great-great grandchildren.

The old house with the three porches still stands.

"As for the flood of 1889," Elsie says, "I didn't bother much about it. It was a flood. That was that. I was six when I saw it go by. But I wasn't in it, you understand. If I was, maybe I wouldn't have been here watching the twentieth century go by." ★

describe" the devastation they beheld; but they then proceeded to write their descriptions of the disaster in comprehensive, though sometimes embellished, detail. Western Union dispatched from Johnstown about 100,000 words of reportage each day for the next two weeks.

Deeply affected by Johnstown's plight, Americans—many of whom had never before heard of that city—contributed generously to its recovery. More than \$3.5 million in donations, among them nickels and dimes from schoolchildren, found their way across America to the devastated city.

The search for bodies continued into the fall.

The enduring people of Johnstown had lost much—but not their faith in themselves. They would hold their ground. They would start over. They would build again.

Remembrance

The 1889 flood, even after a century, still has a presence in Johnstown. Many there have forebears who beheld onrushing water. They hold in their hearts the inherited remembrance of the death and destruction wrought upon the city. The legend is a part of their heritage.

Outward signs of the great flood, however, have largely vanished. Plaques here and there tell of the rampage, and high-water marks can be seen scratched on walls.

What had been the hulking, once imperious South Fork Dam is today a forlorn ruin. Trees and plants have reclaimed Lake Conemaugh, around which the Pittsburgh millionaires took their summer ease. The ghost of their huge, wooden clubhouse still stands, a weather-worn figure of the Gilded Age.

Atop Westmont Hill, overlooking Johnstown, is Grandview Cemetery, a solemn and solitary place. There stands a twenty-one-foot-high granite statue. It renders in symbolic form the virtues of Faith, Hope, and Charity. These keep watch over the unknown dead who perished in the Flood of 1889. Ranged about the monument in semicircular ranks are the 777 simple marble headstones of the anonymous, lost townspeople who now rest "in the peace that surpasseth human understanding." ★

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America's First Ladies

by Betty Boyd Caroli

**Over two centuries the province of the presidential wife
has evolved from purely ceremonial to substantive
world-class figure.**



WHEN George Washington took the presidential oath on April 30, 1789, Martha did not stand by his side holding the Bible as wives of presidents-elect commonly do today during inaugural ceremonies. Martha was not even in New York City, the temporary national capital. She had remained at home in Virginia, partly because her role as consort to the new president was still unclear.

She understood, however, that George would not be king and she would not be queen; and in late May, when the First Lady finally traveled from Mount Vernon to join her husband, her position was fur-

ther clarified. Upon her arrival on the shore of New York harbor on the 27th, Martha found waiting for her the same twelve-oared ceremonial barge that had carried the president-elect to his triumphal welcome in the capital a month earlier. In Manhattan a thirteen-gun salute, a personal welcome by Governor George Clinton, and crowds lining the streets demonstrated that the First Lady would not go unnoticed.

During the next few weeks, the Washingtons set several precedents that would still guide chief executives and their spouses two hundred years later. Because the president's residence also served as his office,

As the wife of America's first president, Martha Washington faced the challenge of determining her appropriate social role. In addition to hosting levees and official state dinners, George and Martha decided to hold open house for callers on Friday evenings. As is suggested in the 1876 painting (above) by Daniel Huntington, Martha presided over these events. "Lady Washington," as she was sometimes called, is shown here standing on the dias at left. John Jay, John Adams, and Alexander Hamilton are on her right; Thomas Jefferson and President Washington are to her left.

his wife was drawn into entertaining. New Yorkers, curious to see Martha, directed their carriages past her house, and she obliged them with invitations to a reception her first weekend there. Then—to soften the president's announcement that he would not call on people in their homes because he wanted to preserve the dignity of the presidential office—Martha set out to pay return visits to all who called on her.

Had she known what the next two hundred years would bring to her successors, she might have reconsidered. More than one president's wife has complained of the burden imposed by her husband's job. Even Martha realized she had undertaken a large task. She confided in letters to relatives that "a great many younger and gayer women would be extremely pleased" to fill the role, but as for herself, she frequently felt like a "state prisoner."

Some Americans objected to the president's wife receiving so much attention. In 1789, a man from Albany wrote to a New York City newspaper that unless a change was made, eventually such items as the following about the First Lady would appear in print: "Her serenity was indisposed last week by a pain in the . . . fourth finger of her left hand . . . but she is recovering and she went out in a Siberian fur delivered to her by the Russian ambassador as a present from the Princess." Although the letter-writer was being sarcastic, he proved surprisingly accurate in predicting the amount of attention future generations would devote to president's spouses.

Martha's immediate successors—Abigail Adams, Dolley Madison, Elizabeth Monroe, and Louisa Adams—continued the patterns she had set, although some were more involved in their supporting roles than others and all of them complained.

Abigail Adams (1797-1801) tried to keep up with the routine of enter-



By the time James Monroe became the nation's chief executive in 1817, his wife Elizabeth had to cope with social obligations that had reached incredible, chaotic proportions. According to one newspaper account of the time, crowds of government, military, and diplomatic officials converged upon "the President's house every Wednesday evening; some in shoes, most in boots, and many in spurs; some snuffing, others chewing, and many longing for their cigars and whiskey-punch." The same writer doubted that Elizabeth could withstand this Washington society: "Mrs. Monroe is an elegant, accomplished woman. . . . Her retired domestic habits will be much annoyed by what is here called society, if she does not change the etiquette (if it may be called so) established by Mrs. Washington, Adams, and Madison, a routine which her feeble constitution will not permit her to encounter. To go through it, she must become a perfect slave to the sacrifice of her health."

taining that Martha had initiated, even though this necessitated her rising at five in the morning. A spirited woman with strong views, Abigail did not limit herself purely to social affairs. She frequently offered advice to her husband on political issues, earning the sobriquet "Mrs. President." This inevitably led to criticism of Abigail for stepping beyond the accepted bounds for her sex, but John valued her counsel and often acted on it.

Dolley Madison (1809-1817) outdid all the others in calling on her

husband's political colleagues, reasoning that she could not do otherwise if he was to win votes. Her warm personality and skills as a superior hostess proved to be a valuable asset to the president, compensating for the reticent, disinterested image James often projected in social situations. Aware of the controversy that had surrounded her predecessor, Dolley sought to avoid appearing an "active partisan" and showered her husband's enemies with the same attention she gave to his friends. She achieved a popularity that her successors would envy for decades to come.

Elizabeth Monroe (1817-1825) angered Washingtonians by entertaining less frequently than they thought appropriate, and she miffed more than one diplomat by insisting that her daughter's wedding was a family—not a state—affair. Both she and Louisa Adams (wife of John Quincy, 1825-1829) caused a stir in the capital by refusing to visit all the congressmen's families who came to town. Finally a cabinet meeting was called to resolve the issue, and its decision was announced: wives of presidents and cabinet officers were to return calls made on them but they would not initiate visits. Presidents' wives would play a public role, but it would be social and ceremonial.

ANDREW JACKSON'S PRESIDENCY (1829-1837) ushered in a new style in First Ladies. Rachel, Andrew's wife, and many of the presidential wives who followed her, lacked the social training of earlier First Ladies. They had not traveled in Europe, were unacquainted with most of the classics, and were unfamiliar with East Coast drawing room etiquette. As a result, they became the focus of derisive gossip and heard their grammar and accents spitefully mimicked.

The entrenched Washington elite ("cave dwellers," as they were sometimes called) habitually scrutinized the families of newly elected



A year after the 1914 death of his first wife Ellen, President Woodrow Wilson married Edith Bolling Galt (above). When Wilson suffered a stroke in 1919, Edith took charge of the White House. "I asked the doctors to be frank with me," she wrote in her memoirs. "Recovery could not be hoped for, they said, unless the President were released from every disturbing problem. So began my stewardship. I studied every paper, sent from the different Secretaries or Senators, and tried to digest and present in tabloid form the things that, despite my vigilance, had to go to the President. I myself never made a single decision regarding the disposition of public affairs. The only decision that was mine was what was important and what was not, and the very important decision of when to present matters to my husband."

speaking her mind. Forced to stay home in Tennessee while her husband campaigned, Sarah wrote letters full of political gossip; when she judged her own Democrats in the lead, she reported she was in "ecstasy."

Mary Todd Lincoln tried to influence her husband's actions by bringing in favor-seekers when the president was least able to deal with them. Finally, Lincoln sought to end entreaties to his wife by announcing that "women have no influence in this administration," but his pronouncement had little effect. Merchants seeking favorable treatment continued to extend credit to Mary, and she, spendthrift that she was,

congressmen and other arriving officials—and presidential wives were liable to the most critical treatment. If a new First Lady had a thick waistline, used the wrong fork, or missed the meaning of a French phrase, she could expect that news of it would be widely circulated. During an era when natural heroes such as "Old Hickory" Jackson or Zachary "Rough and Ready" Taylor won the country's highest political office by emphasizing their lack of sophistication, their wives could expect no such favorable treatment.

Rachel died soon after her husband's election and so was spared the humiliation of returning to Washington, where during Andrew's years as a U.S. senator she had suffered ridicule as being unsophisticated, uneducated, and "fat, forty, but not fair."

Some presidents' wives between 1829 and 1869 sought to avoid such derision by remaining out of sight and appointing a young substitute—a daughter in the case of Taylor, Milard Fillmore, and Andrew Johnson; a daughter-in-law in the case of John Tyler—to serve as the official White House hostess. Americans, infatuated with youth, tended to excuse foibles in young women, although they would have castigated older women for the same behavior. Prior to her death, for example, Rachel Jackson asked her niece, Emily Donelson, to substitute for her as First Lady. While subsequently performing the duties of that role, Emily was praised as "simple" and "sweet"—two of the traits that had earned her aunt the scorn of the Washington establishment.

A FEW PRESIDENTS' WIVES of the mid-nineteenth century stand out as strong, independent women concerned with politics and participation in their husbands' careers. Sarah Polk (1845-1849) relished presidential campaigns, although the standards of the age forbade her to travel with the candidate and

took full advantage of the opportunity. After Abraham won re-election in 1864, Mary admitted to owing more for finery than he earned in a year; her debts were actually *much* larger than his annual income.

Julia Grant (1869-1877) was one of the few First Ladies who enjoyed the spotlight. Cameras, however, then more visible in Washington than ever before, did her no favors. Mildly crossed eyes and a very plain face made Julia the subject of many jokes but, content with her appearance, she continued to pose for pictures. Her one concession was to turn sideways so that the lens would not capture the intersection of her gaze.

By the 1870s, Americans seemed ready to accept a new model of femininity. College enrollment for women had increased, and many women had begun to speak in public on behalf of one cause or another. First Ladies followed the lead of their sisters.* Temperance advocate Lucy Hayes (1877-1881), a graduate of the Wesleyan Female College in Cincinnati, Ohio, was quickly dubbed "Lemonade Lucy" when she refused to serve alcoholic beverages in the White House. Lucretia Garfield (1881) studied the history of the White House during her brief tenure there. And Caroline Harrison (1889-1892) supported admitting women to Johns Hopkins Medical School. Because of these and other initiatives taken by women, talk persisted of a "New Woman" in America—and in the White House.

Not until the twentieth century, however, did White House chateaux come into their own as public figures. Edith Roosevelt (1901-1909) led the way by institutionalizing the job of First Lady—she was the first to hire a social secretary and to attempt to "manage" the press. When reporters insisted on knowing just

**The term "First Lady" is used in this article to describe all of the presidents' wives; however, this expression actually first came into use during the 1870s.*

what food would be served and where guests would sit at White House dinners, she obliged with the information. But she was not above straying slightly from or evading the truth either; a dress previously described to reporters as green when worn to the event might actually be blue.

Ambitious Helen Taft (1909-1913) helped to engineer her husband's elevation to the presidency. She had never been content to stay in her native Ohio, and when a chance came for William Howard Taft to serve as governor in the Philippines, she urged him to accept, although neither of them had much idea of what the job entailed. When President Theodore Roosevelt brought William back to Washington to serve in his cabinet, Helen had to content herself with reduced circumstances; it did little good to remind her, as the president did, that some women did not mind doing without champagne. When the possibility arose that William might be appointed to the Supreme Court (a role he would have been pleased to accept), Helen intervened with President Roosevelt, who later wrote that after "a half hour's talk with your dear wife" he understood why Taft did not want the appointment.

Finally, in 1908, Helen got her way; her husband won his party's nomination to the nation's highest office and was elected. Unfortunately, she suffered a stroke within months of moving into the White House and was not able to exert the influence she would have liked over her husband's decisions. Most observers agreed, however, that her impact was noticeable. Helen insisted, for example, that a diplomat then serving in Europe be dismissed because he had treated her badly twenty years earlier. Taking firm



Upon John F. Kennedy's election in 1960 his wife Jacqueline became the object of not only national but international fascination. When she traveled with the president to Europe in 1961, Parisians were agog over the "magnifique," "ravissante" Jackie. Her husband was delighted with her international celebrity status, and during an appearance before Allied military leaders he good-naturedly introduced himself as "the man who accompanied Jacqueline Kennedy to Paris."

charge of the White House, she budgeted its operations so well that after two years the Tafts accumulated an \$80,000 surplus for their personal bank account. And during political discussions in social settings she hovered near her husband's side, supplying him with a useful statistic or the right name if need be.

Had Helen been born a man or in a later era, she surely would have made a career for herself—most likely in a traditionally male realm. She often said that she found women boring, and she was annoyed on trips when her husband was "escorted everywhere with honor while I am usually sent with a lot of uninteresting women through some side street to wait for him at some tea or luncheon."

Helen Taft was not unusual in creating an influential role for herself. She was just one in a series of strong First Ladies of the early twentieth century. Another was Ellen Wilson (1913-1914), who became so involved with housing reforms that observers said no one moved in

Washington society without a full understanding of the problem.

Edith Wilson (1915-1921), who married Woodrow after Ellen died, is usually singled out as one of the most powerful First Ladies, a woman who "virtually took over the reins of the White House" and served as "surrogate President." That reputation may be exaggerated because the charge raised during Woodrow's recovery from a stroke was that too little was being done at the White House—hardly the sign of a strong leader. Edith merely summed up what became clear by 1920: the American presidential system permitted the participation of chief executives' wives in substantive matters, and many of the women who served in that position were not adverse to taking full advantage of their opportunities.

THE THREE FIRST LADIES of the 1920s well represented that decade of excess and change in women's lives.

Florence Harding (1921-1923) had worked at her husband's newspaper before she accompanied him to Washington, and she had her own ideas about what the public should be told and what kind of image sold best. Although well into her sixties, she dressed in the same dress styles favored by young Hollywood starlets, relying on cosmetics and careful hair styling to help her appear younger than her years. A long marriage to Warren Harding (five years her junior) had given her time to perfect the art of shaving off a few years.

Grace Coolidge (1923-1929), with her flapper dresses and zany style, could have been cast in Hollywood for the role of First Lady. As charming as her husband was dour, and talkative while he earned the nickname of "Silent Cal," she was a great social asset to him. Despite having grown up in a small Vermont town and living most of her adult years in modest circumstances, she adjusted quickly to the Washington

Recommended additional reading: First Ladies by Betty Boyd Caroli (Oxford University Press, 1987) and Presidential Wives by Paul F. Boller, Jr. (Oxford University Press, 1988).

spotlight.

Although Calvin did not permit Grace to give interviews while he was president, she told the public a great deal when she left the capital—including how she had managed to make herself so popular. She had great fun, Grace wrote, by not trying to impress anyone. She added that at her first big party, she had stood in a “simple gown [sewn] by a village dressmaker,” receiving guests alongside a hostess “resplendent in a gorgeous creation of brocaded white satin by Worth” and she had enjoyed a “wonderful time.”

Lou Hoover (1929-1933), one of the best prepared of all First Ladies to move into the White House, received little credit for all her hard work. Having lived in several countries around the world and having managed large houses on different continents, she was superbly qualified to be First Lady. Fluent in five languages, she held a degree in geology from Stanford, Herbert's alma mater.

But for all her preparation, Lou was never treated sympathetically by the press, though not for lack of effort on her part. She gamely appeared before movie cameras so that people could see her in newsreels, and, after practicing radio speaking in an upstairs laboratory, went on national radio to speak to young people about their duties in the home. The country reeled beneath the depths of a depression and Lou, like her husband, focused on voluntary, private measures to solve the problems. During another radio address, she urged women to volunteer their time and efforts to help the ill, needy, and others less fortunate because, if all cooperated, there would be “ample food and clothing for us all.”

Eleanor Roosevelt (1933-1945) almost fearlessly built on the experiments of the women who went before her. “I shall very likely be criticized,” she told a friend when she set out to be First Lady, “but I



Current First Lady Barbara Pierce Bush has worked for years on a number of causes, including promoting literacy and supporting shelters for the homeless. Here she holds a plaque (adorned with an old shoe) that she was given in appreciation for visiting the Los Angeles Mission. Barbara has also been a board member of the Reading is Fundamental program, and she plans to establish a private foundation called the Barbara Bush Foundation for Family Literacy. Asked by a newspaper reporter what she would like to be remembered for following her husband's term in the White House, Barbara replied, “I hope people will say ‘She cared; she worked hard for lots of causes.’”

cannot help it.” That kind of confidence was rare in a president's wife and it served Eleanor well. She broke many precedents; for example, she accepted money for magazine articles she wrote and she publicly expressed her opinion on a variety of subjects. When she first started holding news conferences for women reporters, Eleanor promised not to discuss pending legislation. But she soon broke her pledge, prompting news services that did not previously have women reporters to hire some so they would not miss the First Lady's “scoops.”

Eleanor's support of rights and opportunities for women and minorities; her outspoken defense of young people—even those with unpopular political views; and her trips to Appalachian shanties, coal mines, and other places that women of her class usually did not visit,

won her many admirers. Even some of her critics eventually defended her. When Eleanor served in the United Nations after her husband's death, one of her colleagues, Michigan Senator Arthur Vandenberg, was moved to confess, “I take back everything I ever said about her and believe me, it's been plenty.”

The next two First Ladies did not choose to follow Eleanor's example, showing once again how open the position is to interpretation and to individual differences. Bess Truman (1945-1953) refused to hold news conferences, although reporters urged her to do so. She preferred complete privacy. When Bess finally consented to answer reporters' written questions, she responded “No comment” to nearly one-third of their queries. Her most revealing response came to a question about whether or not she had wanted her husband to become president. “Definitely did not,” she wrote, underlining “definitely.” However, Bess gamely went along with Harry's chosen career, and he gave her considerable credit for offering him good advice. Even Washingtonians considered her important, and in 1949 she joined Eleanor Roosevelt on *McCall's* list of the ten most powerful women in Washington.

Mamie Eisenhower (1953-1961) completes the roster of White House women born in the nineteenth century. Like Bess Truman and Eleanor Roosevelt, she never attended college, going instead to finishing school—the typical education for a young, upper-class American woman of her time. Accustomed to following her military husband around the world, Mamie settled comfortably into hostessing at the White House. Her bangs set hair fashion; her recipe for fudge made cooking news; and, with her preference for pastels and her emphasis on youthful styles, she became a symbol of femininity in the 1950s—pleasantly pink and fluffy but lacking substance.

Continued on page 48

Samuel Slater: Father of the Industrial Revolution

by Joseph Gustaitis

INDUSTRIAL ESPIONAGE has probably been around since prehistoric times. For centuries, Arabs tried to get the formula for the Byzantines' secret weapon, "Greek Fire." Father d'Entrecolles, a French Jesuit in eighteenth-century China, succeeded in ferreting out the closely guarded key to making porcelain and sent the formula to France. Fredrich Krupp founded the German steel and munitions empire by dispatching spies to England to learn the techniques of the superior English steel industry.

But no more incredible story of international technology-snooping exists than that of Samuel Slater (1768-1835). Needless to say, he had no microfilm or microphones—but Slater didn't have a picture, a manuscript, a word of text, or a piece of paper either. He had nothing—nothing, that is, but what he could carry away in his brain—and his memory was uncanny. It changed American industry.

In the latter decades of the eighteenth century, American manufacturing was second-class compared to Great Britain's, and the English meant to keep it that way. In Britain, the tools of the Industrial Revolution—the steam engine, the spinning jenny, the water frame, the smelting of steel—stimulated a growth of national wealth and power that became the envy of the world.

Textile manufacturers in America knew of the fabulous new machines the British were installing in their cotton mills—particularly the spinning frames invented by Sir Richard Arkwright in 1769. But the New World capitalists could duplicate them neither by speculation, hearsay, nor stealth. Export of machinery or drawings was illegal and emigration of mechanics forbidden—port officials watched ships' passenger lists to ensure none left.

In 1786 a group of Philadelphians advertised for an English engineer, and when word got around the British Midlands that an escaped mechanic who had been only partly successful in building a carding machine had nevertheless been paid one hundred pounds, many a mechanic considered following him to America. One of them was Samuel Slater.

Slater was born on June 9, 1768, in Belper, Derbyshire. His father, a successful, educated farmer, recognized the boy's gift for mathematics and talked about it to his friend, mill owner Jedediah Strutt, who just happened to be Arkwright's business partner. So at the

age of fourteen-and-a-half, Samuel signed on with Strutt for an apprenticeship of six-and-a-half years. Slater did not consider the mill oppressive; rather, he found it so interesting he even spent his Sundays there, watching the spinning frames whir, fascinated by the complex machinery. After his apprenticeship ended, he supervised the construction of new machinery in one of Strutt's mills.

In September 1789, Slater decided to emigrate to America. Traveling to London to book passage, he was able to pass as a farmer and was careful to carry no papers, with one exception—his apprenticeship indenture certificate, which he hid in the bottom of his trunk. Everything else he carried in his head.

Once in the United States, Slater heard of Moses Brown, a Quaker who was a partner in the firm of Almy & Brown with mills in Pawtucket, Rhode Island. He wrote Brown a letter that said, in part, "A few days ago I was informed that you wanted a manager of cotton spinning, & c. in which business I flatter myself I can give the greatest satisfaction, in making machinery, making good yarn, either for stockings or twist, as any that is made in England; as I have had opportunity, and oversight, of Sir Richard Arkwright's works, and in Mr. Strutt's mill upwards of eight years. If you are not provided for, should be glad to serve you. . ."

Brown's surprise is almost audible in his response: "As the frame we have is the first attempt of the kind that has been made in America, it is too imperfect to afford much encouragement; we hardly know what to say to thee. . . ." Brown offered Slater a partnership and a share of the profits, *if* "thou couldst perfect and conduct them to profit."

Upon arriving at Almy & Brown's mills, Slater examined the existing machines and pronounced them worthless. So, at a wage of one dollar a day, relying only on his memory, he set to duplicate every part, every bolt, every inch of the complex machines he had operated in England.

After a year of laboring night and day, Slater was ready to test his machine—and to his immense dismay, it did not perform. The carder didn't operate properly; the cotton bunched up against the teeth.

Slater was so upset he thought of running away, but Sylvanus Brown, Moses's brother, spotted the problem. Examining the hand-carding equipment his wife

American



CULVER PICTURES, NEW YORK CITY

used at home, he saw that the angle of the teeth was not the same as in Slater's machine. It turned out that Slater had specified the proper angle, but the leather holding the teeth was inferior and did not keep them in place. The adjustment was made; the machine worked perfectly. Five days before Christmas 1790, the first cotton spinning mill in America—Almy, Brown & Slater—was in business.

While working on his reconstruction of the Arkwright machine, Slater roomed with Oziel and Lydia Wilkinson and their five sons and three daughters. One of the girls caught Slater's eye, and he married Hannah Wilkinson on October 2, 1791.

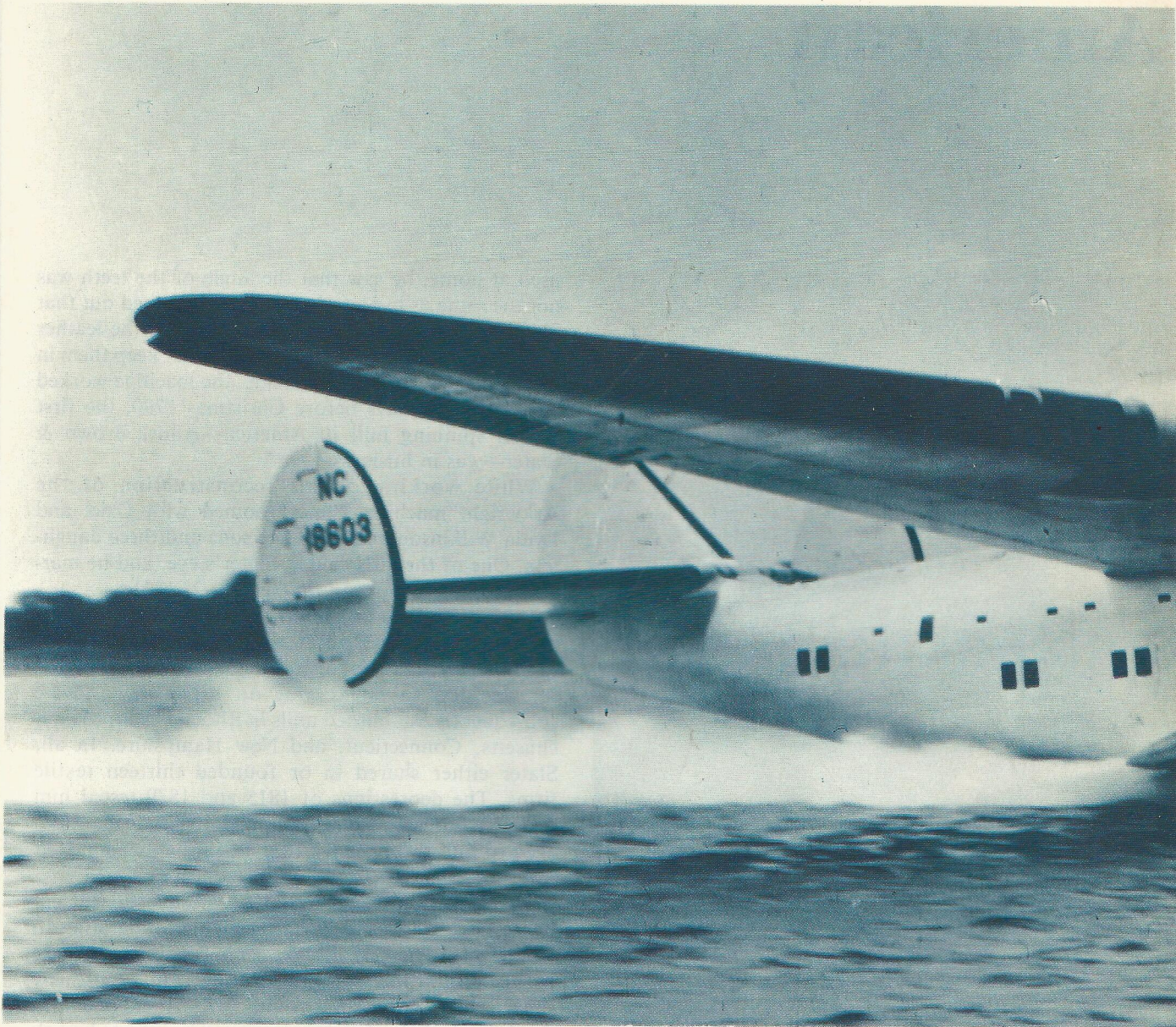
Business was good, and in 1793 Slater and his partners opened another mill that survives today in Pawtucket as an industrial historic site. Then, in 1798 Slater decided to strike out on his own, and he subsequently established mills in Rhode Island, Massachusetts, Connecticut, and New Hampshire. In all, Slater either shared in or founded thirteen textile firms. The depressions of 1815 and 1829 tested him severely, but with persistence and fortitude he managed to pull through. By 1831 he probably employed more workers than any other person in America.

By all accounts, Slater was a paternalistic but enlightened employer. English mechanics emigrating to New England headed straight for his company because of his reputation for fair dealing. He generously shared his expertise; providing both advice and financing he helped many young entrepreneurs launch businesses.

Two years before Slater's death in 1835 an admirer, President Andrew Jackson, visited his home to pay homage. Jackson bestowed upon the sixty-four-year-old industrialist the title "Father of American Manufactures," remarking, "I understand you have taught us how to spin so as to rival Great Britain in her manufacture; you set all these thousands of spindles to work, which I have been delighted in viewing, and have made so many happy by a lucrative employment."

"Yes, sir," Slater answered. "I suppose that I gave out the psalm, and they have been singing to the tune ever since." ★

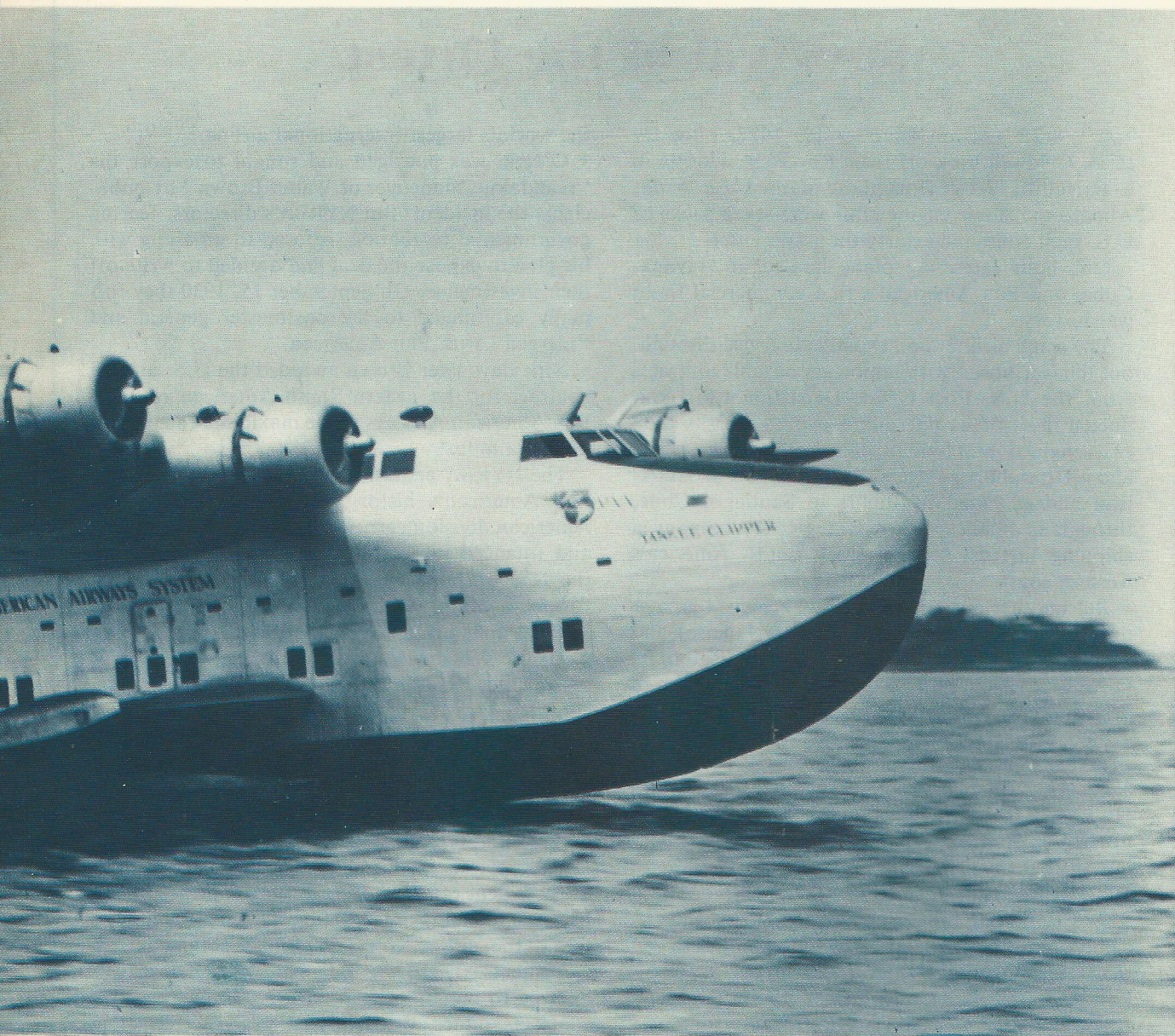
Emmy-Award-winning writer Joseph Gustaitis lives in Brooklyn, New York.



Bridging the Atlantic

by Richard K. Schrader

Today millions of passengers fly between the United States and Europe via the world's busiest ocean air corridor. It all started fifty years ago with Pan American's luxurious "Clippers."



THE PAN AMERICAN AIRWAYS flying boat *Yankee Clipper* taxied from alongside its Port Washington pier onto the open water of Long Island's Manhasset Bay and turned into the wind. Then, as the thunder of its four 1,500-horsepower engines echoed from the shoreside hangars, the gleaming, forty-one-ton airliner accelerated across the inlet, lifted off, and banked eastward toward the Atlantic. With Captain Arthur E. La Porte at the controls and fifteen other Pan American employees aboard as crew and observers, the *Yankee Clipper* was bound for Europe with a cargo of 112,574 pieces of mail and four dozen California marigolds. The date was May 20, 1939—fifty years ago this month.

Twenty-six and one-half hours later, having made a six-hour stop at the port of Horta in the Azores, the Boeing flying boat landed on the Tagus River at Lisbon, Portugal. From there the *Yankee Clipper* made a short

jump to Marseilles, France—completing a 3,650-mile journey and inaugurating scheduled airmail service across the North Atlantic.

Flown twelve years to the day after Charles A. Lindbergh's epic solo flight from New York to Paris in the *Spirit of St. Louis*, the Pan American crossing likewise was an unprecedented achievement. Pan American Airways had not even existed at the time of Lindbergh's epic feat.* Its first commercial flight, five months later on October 19, 1927, had been a 110-mile hop from Key West, Florida to Havana, Cuba with a borrowed single-engine floatplane carrying 251 pounds of mail. But such was the dynamism of the airline—and of its foresighted, aggressive president Juan Trippe—that by 1939 its sphere of influence had expanded to encompass the Caribbean, South America, and the Pacific and Atlantic

*The company's name was changed to Pan American World Airways on January 3, 1950.

Survival of the Fittest

AT 8:25 A.M. on October 19, 1927, pilot Cy Caldwell took off from Key West, Florida in a Fairchild FC-2 floatplane named *La Niña*. Aboard the single-engine craft were seven sacks of U.S. mail containing thirty thousand letters.

One hour later, the plane landed at Havana, Cuba, and Pan American's first commercial flight was history.

The small airline soon expanded service throughout the Caribbean with important airmail contracts from the U.S. Post Office Department. It conducted most of its operations using Sikorsky S-38 twin-engined amphibians that could carry cargo and up to eight passengers. By July 1929 Pan American had extended its flights to Santiago, Chile, through an alliance with W.R. Grace & Company, a shipping line established along South America's western coast.

But another airline had already achieved greater prominence: the New York, Rio [de Janeiro] and Buenos Aires Line (NYRBA). Captain Ralph A. O'Neill, a visionary who had been a fighter ace in World War I, had founded the line. O'Neill was a skilled engineer, an able leader, and a Spanish-speaking diplomat.

Securing financial backing, chiefly from James H. Rand, Jr., of the Remington Rand Company, O'Neill created a spectacular route system extending all the way from New York to Rio de Janeiro and Buenos Aires. The company linked more than forty cities along the eastern United States, the Caribbean, and the east coast of South America (a distance totaling more than 7,700 miles) using Sikorsky S-38s and Consolidated "Commodore" flying boats capable of carrying twenty-four passengers. And, using Ford Trimotor land planes, NYRBA extended its routes from Buenos Aires to Santiago and Yacuiba, the former journey being the first transcontinental air route in South America—over the fifteen-thousand-foot-plus passes of the Andes.

But the future clouded for this remarkable air carrier. Opposition from Pan American president Juan Trippe and the stock market's October 29, 1929 crash sent NYRBA's financial directors into distress. Adding further woe was the U.S. Post Office Department's refusal to award an all-important airmail contract for the eastern route to South America.

The coup de grâce came when Postmaster General Walter Folger Brown exerted pressure for a merger with Pan American. This so-called merger actually represented a parvenu's hostile takeover of

the world's largest international airline.

O'Neill was outraged and sought to expose the "scandalous maneuver of Walter Brown" by publicizing the incident. But NYRBA's directors, fearing governmental retaliation, refused to go along with his plan to expose the deal and decided to write off their investments. On September 15, 1930 they formally capitulated to the postmaster general and "merged" with Pan American.

Nine days later Brown awarded the U.S. airmail contract for the eastern South American route to Pan American Airways at the maximum rate of two dollars a mile.*

The NYRBA acquisition is important in relating Pan American's history, for the lucrative South American division earned millions for the company and financed its worldwide expansion. Moreover, the NYRBA managers and pilots who stayed on formed a cadre with expertise in operating a large international airline. (O'Neill refused Trippe's offer of a vice-presidency; bitter about the takeover of his airline, he left to start a successful mining company.)

Brown, however, had also conducted questionable dealings with other airlines, and, on September 26, 1933, the U.S. Senate launched an investigation. Government scrutiny dragged on for months—then erupted into a national scandal. President Franklin D. Roosevelt was outraged. On February 9, 1934 the president canceled every airmail contract Brown had granted and forever banned from air transportation the airline chiefs who had obtained such agreements. There was one exception; Trippe was allowed to remain at Pan America's helm with his contracts intact, ostensibly to prevent tarnishing America's only flag carrier abroad.

Trippe was lucky to have survived the purge. He continued as a shrewd businessman, dealing ruthlessly with opposition. NYRBA was but one of many acquisitions Trippe made during a reign as Pan American president that lasted until 1964. But he also foresaw aviation's tremendous future and campaigned zealously to create new routes across the globe. There were bold dreams to pursue. ★

**Brown had wielded almost dictatorial powers in awarding mail contracts because the Kelly Foreign Air Mail Act of 1928 empowered the postmaster general to decide which air carriers could best serve government interests. To enable Americans to compete with state-backed foreign carriers, Brown and other officials supported the concept of a subsidized monopoly in U.S. overseas operations rather than fostering competition between several air lines.*

oceans, with more than a hundred multi-engine airliners transporting passengers and cargo over the world's most extensive aerial network.

Just five weeks after the *Yankee Clipper* inaugurated airmail flights between the United States and Europe, a sister ship achieved an even more historic "first." Following the same route from Port Washington to Marseilles, the *Dixie Clipper* began passenger service. Pan American had bridged the North Atlantic, opening a thrilling new era in commercial aviation.

PAN AMERICAN'S ACHIEVEMENT was the culmination of a daring but methodical program of route expansion and technological progress the company had followed since its creation. Preparations for the great conquest had actually started in 1928 when Trippe—a twenty-nine-year-old former naval aviator and Yale graduate—began investigating possible air routes across the Atlantic. Such ambitious plans were incredibly bold for a fledgling airline, for they marked a direct challenge to the great ocean liners that ruled the sea.

Steamers had carried millions of passengers between Europe and America since the nineteenth century, and in 1928 ships still remained the only way to cross. The immigrant steerage trade of earlier years had given way to a new era of tourism, and many nations competed for the traffic. New vessels of unprecedented size, speed, and luxury were under construction. Only a visionary like Trippe could imagine an airplane competing with such palatial liners.

But Trippe saw the airliner as the future bridge from America to Europe as well as to Asia. In 1932 he hired the distinguished Arctic explorer, Dr. Vilhjalmur Stefansson, to provide data on geographical and meteorological conditions in the northern latitudes. Then, in 1933 he enlisted Charles and Ann Morrow Lindbergh to conduct a survey flight across the Atlantic to gather data on the weather aloft and to pinpoint suitable sites for seaplane bases.*

On July 9 the celebrated couple rose from the waters of Flushing Bay, New York in a single-engine Lockheed Sirius floatplane, the *Tingmissartok*. Heading east along the fringes of the North Atlantic, they flew over and made stops in Nova Scotia, Newfoundland, Labrador, Greenland, Iceland, Denmark, Sweden, Finland, Russia, and Norway. Then, turning south, they returned to the United States by way of England, Wales, Scotland, France, Holland, Switzerland, Portugal, Spain, Rio de Oro, Gambia, Brazil, Trinidad, Puerto Rico, and the Dominican Republic.

When the Lindberghs finally arrived back at College Point on December 19 they had completed a survey covering thirty thousand miles. Lauded as one of the stellar achievements in aviation history, the trip reaped enormous benefits for Pan American. The fliers had shown

**Hired by Juan Trippe in 1927 as a technical consultant to Pan American, Charles Lindbergh had already scouted potential air routes for the airline in Central and South America and across the north Pacific.*

that adverse weather and strong winds over the Atlantic were surmountable. And they had located potential sites for seaplane bases.

That same year Pan American acquired a seaplane base at Port Washington on Long Island, New York to provide a strategic departure point for the eventual air link with Europe. The following year the company made arrangements to lease another base at Baltimore, Maryland.

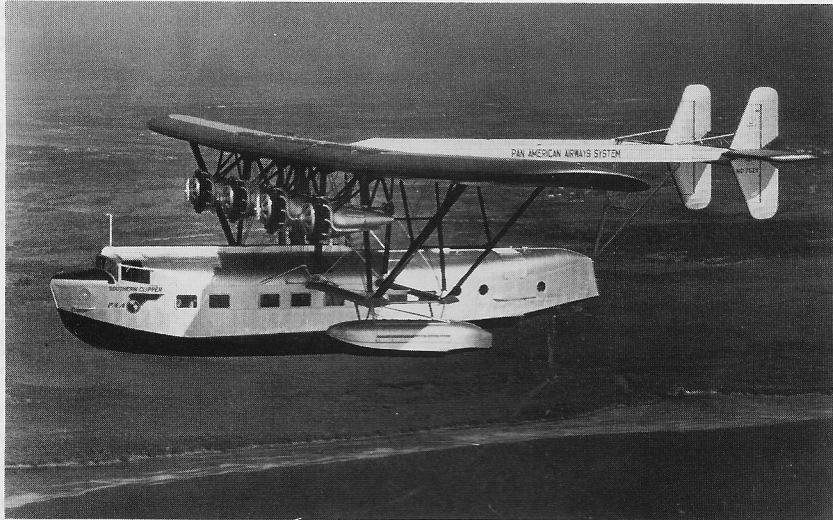
MEANWHILE, Pan American's Central and South American operations provided valuable experience for later use on the company's projected Atlantic and Pacific routes. Having absorbed the New York, Rio & Buenos Aires Line in 1930 (see sidebar on page 36), the company inaugurated direct air service from Miami to the Panama Canal Zone via Cuba, Jamaica, and Colombia. The six-hundred-mile flight from Kingston, Jamaica to Barranquilla, Colombia, using two-engined Consolidated "Commodore" flying boats, was the longest over-water route in the world at the time and provided the foundation for establishing open-ocean routes.

Trippe soon reinforced the Latin American network with larger aircraft such as the forty-passenger Sikorsky S-40, the first American four-engine flying boat and the first of the Pan American "Clippers." An improved model, the Sikorsky S-42, could carry up to four tons of cargo or passengers and had a maximum range of more than two thousand miles. This version was introduced with the Miami-Rio run in August 1934. For inland air service, Pan American began utilizing modern, multi-engine landplanes—fourteen-seater Douglas DC-2s. By the end of 1934, the carrier was operating out of 103 airports and fifty-six seaplane bases.

IN JANUARY 1935 Trippe contacted the Bureau of Air Commerce, formally advising the government of his company's desire to establish transatlantic air service. But because no aircraft capable of economically carrying passengers across the Atlantic yet existed, implementation of this ambitious undertaking had to be temporarily deferred. In the meantime, Pan American turned to the Pacific for its first transoceanic effort.

The projected Asian route extended from San Francisco Bay to Manila by way of the mid-Pacific. Although the eight-thousand-mile route would be more than twice as long as an Atlantic crossing, it could be achieved with new four-engined, long-range Martin M-130 seaplanes making a series of hops from island to island—Oahu, Midway, Wake, Guam, and Luzon.

In a massive logistical effort begun in March 1935 and completed with the cooperation of the U.S. Navy, Pan American built seaplane bases and passenger facilities on Midway, Wake, and Guam. In April 1935 a Sikorsky S-42 commenced survey flights along the route, and in the fall the government awarded Pan American a Pacific airmail contract. This was followed by the arrival of the first Martin M-130, Pan American's soon-to-be-



Pan American's first four-engined flying boat, the forty-passenger Sikorsky S-40, served the airline on South American routes during the early 1930s, providing experience in long over-water flights.

famous *China Clipper*.

Then, on November 22 at a gala Alameda, California departure ceremony attended by leading government officials and twenty-five thousand spectators, Trippe directed attention to chief pilot Edwin C. Musick: "Captain Musick, you have your sailing orders. Cast off and depart for Manila in accordance therewith." At 3:45 P.M. the *China Clipper*, with her seven-man crew and 111,000 letters, took off from San Francisco Bay and headed west through the Golden Gate. The journey to the Philippines took six days, of which fifty-nine hours and forty-eight minutes were spent aloft. The flying boat returned to America on December 6 with 98,000 letters.

Transpacific passenger service to Manila began on October 21, 1936. The route was linked to China on April 21, 1937, when Pan American began airmail flights to Hong Kong with a Sikorsky S-42 flying the connecting leg from the Philippines. Eight days later the entire route was opened to passengers. In the meantime, the airline started survey flights to New Zealand. It inaugurated regular service to Auckland in 1940.

Pan American made headlines, and President Franklin D. Roosevelt presented the airline with the Collier Trophy for outstanding achievement in aviation.

The Atlantic finally loomed as the next challenge.

THE MARTIN CLIPPERS used on Pan American's Pacific route were superb aircraft, but their range and payload were still not enough to meet Trippe's requirements. The M-130s could carry as many as thirty-two passengers for short distances but were limited to as few as two on the 2,415-mile flight between California and Hawaii. For this leg of the transpacific route most of the payload had to be replaced with fuel.

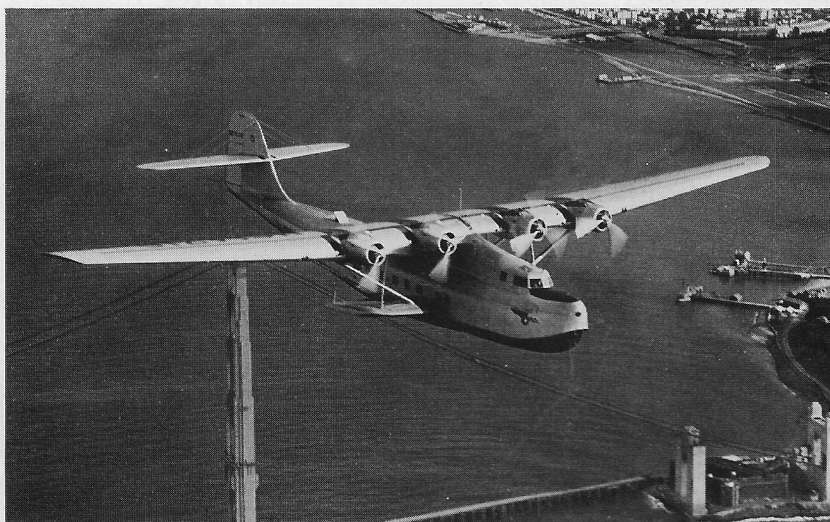
With his eye on the longer Atlantic run, Trippe laid out specifications for a larger aircraft to carry more passengers farther than ever before. He invited four manu-

facturers to submit proposals and bid for a contract.

Seattle's Boeing Airplane Company won the competition with a design for a giant flying boat with a 152-foot wingspan—greater than that of today's 707 jet transport. Four new Wright Aeronautical "Cyclone" engines with propellers nearly fifteen feet in diameter provided six thousand horsepower—almost twice that of the *China Clipper*. Capable of cruising 145 mph at an altitude of five thousand feet, the stately craft could carry up to seventy-four passengers on short flights and thirty-four across the Atlantic. Its deep hull contained two decks—an upper "bridge" for the flight crew (much like that of today's Boeing 747) and a lower passenger level with six spacious passenger lounges with seats and sleeping berths, men's and women's dressing rooms, a galley, and a deluxe "honeymoon" suite. Accommodations were more plush than in the first-class section of a modern jetliner.

This flying boat, the Boeing 314, was the most advanced aircraft in the world. On July 21, 1936 Trippe signed a \$4.8 million contract for six airplanes, with an option for six more. Completion and delivery of the first aircraft was slated for December 21, 1937.

POLITICAL AS WELL AS technical barriers still had to be hurdled. Since 1928 Trippe had been negotiating with the governments of Bermuda, Great Britain, Canada, France, Ireland, and Portugal for permission to conduct commercial air service through their territories. Pan American encountered frustrating delays in this diplomatic bargaining, however, and not until 1937 did it achieve some success. On February 22 of that year Great Britain's civil aviation director authorized the airline to conduct scheduled flights through Newfoundland and the United Kingdom. Shortly afterward, Bermuda, Canada, and Ireland issued similar permission. But France and Portugal, while allowing survey flights, did not yet open their territories to foreign airline



Pan American opened the Pacific route in 1935 with Martin M-130 flying boats. Here the famed China Clipper leaves San Francisco for Manila via Oahu, Midway, Wake, and Guam.

service.

In February 1938 the Canadian government invited representatives from Pan American, Great Britain, and Ireland to meet to standardize radio communications and weather reporting. This productive session was followed by another in Dublin, and it resulted in the formation of the Transatlantic Air Safety Organization, a body dedicated to regulating communications among international airlines and uniform dissemination of weather information—a benefit not only for Pan American but for the future of international air travel.

Meanwhile, Pan American air crews, the acknowledged masters of long-range navigation because of their Pacific experience, prepared for the challenge of the harsher Atlantic. In spring 1937 they assembled a staff of 113 employees at Port Washington and formulated a battle plan to assault the cold Atlantic climate. On May 25, 1937 a Sikorsky S-42B, the *Bermuda Clipper*, under the command of Captain H. E. Grey, ventured into the Atlantic on a survey flight to Bermuda.

This and subsequent flights proved a valuable laboratory for gaining experience with in-flight icing conditions. As a result of the knowledge gained, Pan American equipped its aircraft with wing and propeller deicers. On July 18, 1937, the airline began the first scheduled airline service to Bermuda.

Pan American now concentrated on the northern Atlantic—and Europe. Another Sikorsky S-42B, the *Pan American Clipper III*, stripped to essentials to extend its range, left Port Washington on June 25, 1937 and surveyed the route to New Brunswick. The craft continued on to Newfoundland on June 27, in preparation for the long journey to Ireland and England.

On July 3, the *Pan American Clipper III* went all the way across—via Shediac, New Brunswick; Botwood, Newfoundland; Foynes, Ireland; and Southampton, England. In August Pan American Clippers completed two more transatlantic survey flights, the last to South-

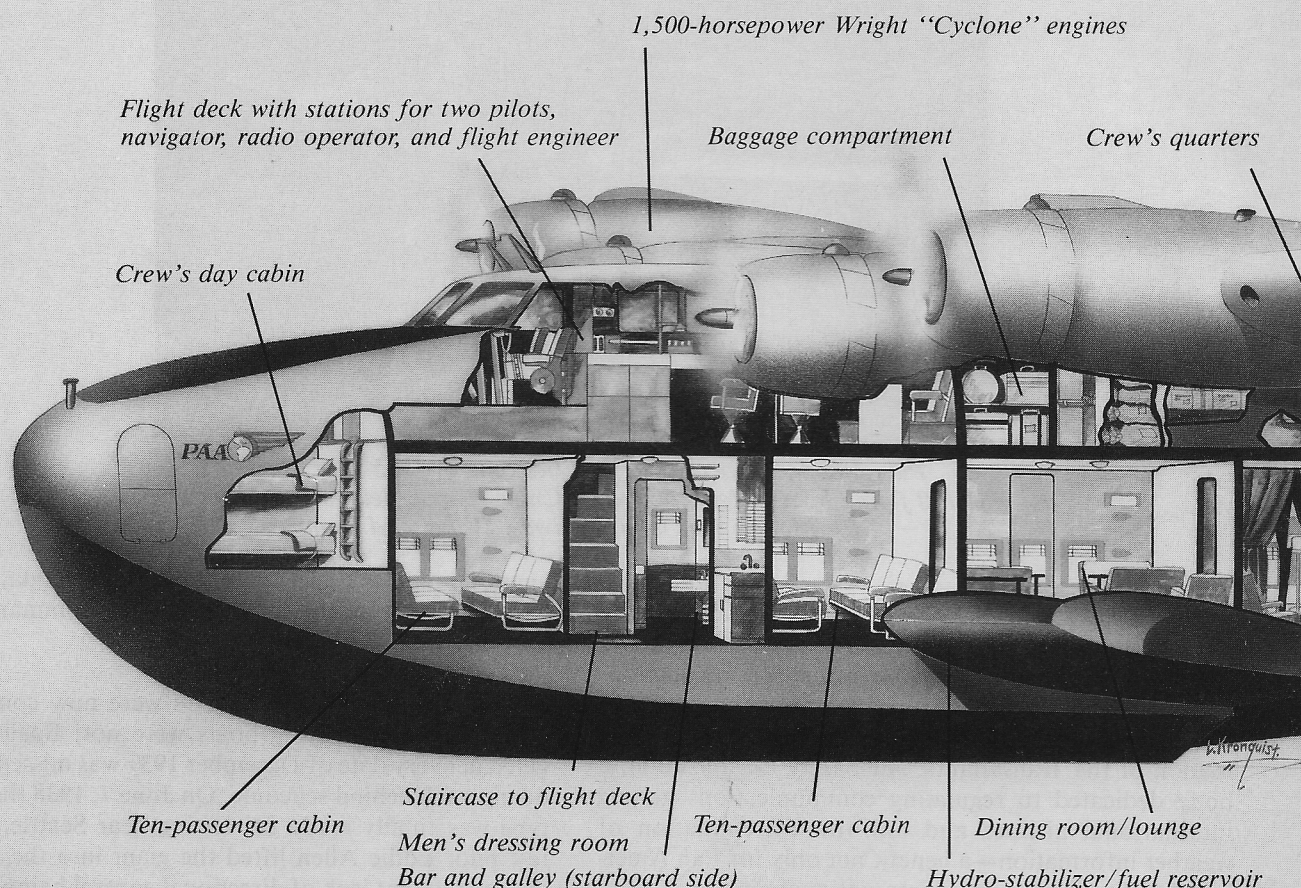
ampton via a southern route through Bermuda, Horta, Lisbon, and Marseilles. Captain Grey commanded all five surveys.

THESE TRAILBLAZING FLIGHTS were now completed, but the new flying boats were not; Boeing's targeted delivery date of December 1937 was missed as production fell behind schedule. On June 7, 1938 the prototype was finally ready for testing near Seattle. Boeing test pilot Eddie Allen lifted the giant into the air, and discovered that lack of directional control hampered the seaplane's turning ability. Boeing modified the design by adding two large fins to the tail, improving the handling characteristics, and the rest of the test program proceeded without incident. At last, on January 27, 1939 the first Boeing 314 was delivered to Pan American for commercial service. The remaining five aircraft followed at monthly intervals until the last was ready in June.

But transatlantic service was again delayed. On January 17, 1939 the French government had authorized flights into France, but permission from the Portuguese to land at Horta and Lisbon was not forthcoming until February. Consequently Trippe assigned the first of the new flying boats to the Pacific route, where it was used to strengthen the existing Martin M-130 fleet.

On February 24, 1939 the first Boeing 314 destined for the Atlantic arrived at the Baltimore seaplane base. On March 3 the craft flew to the Anacostia Naval Air Station in Washington, D.C., where Eleanor Roosevelt christened it the *Yankee Clipper* in a ceremony attended by dignitaries and company officials. On March 26 the flying boat, under Captain Grey's command and carrying observers from the U.S. government, Boeing, Wright, and Pan American, took off from Baltimore on a ten-thousand-mile "shakedown" flight to Europe and back.

On May 17 the United States Civil Aeronautics Au-



thority issued Pan American operating rights for the transatlantic routes. The formality was promptly approved by President Roosevelt. There would be no red tape from Washington, D.C., to hold up the flights.

Then came the historic May 20 inaugural mail flight with 1,804 pounds of cargo. That was followed by another on June 24, when Captain W.D. Culbertson and the *Atlantic Clipper* carried 609 pounds of airmail, along with sixteen newspaper and radio reporters.

On June 24, the *Yankee Clipper*, with Captain Grey again at the controls, commenced airmail flights over the northern route via Shediac, Botwood, Foyne, and Southampton. Along with 2,543 pounds of mail were twenty officials from the U.S. government and Pan American.

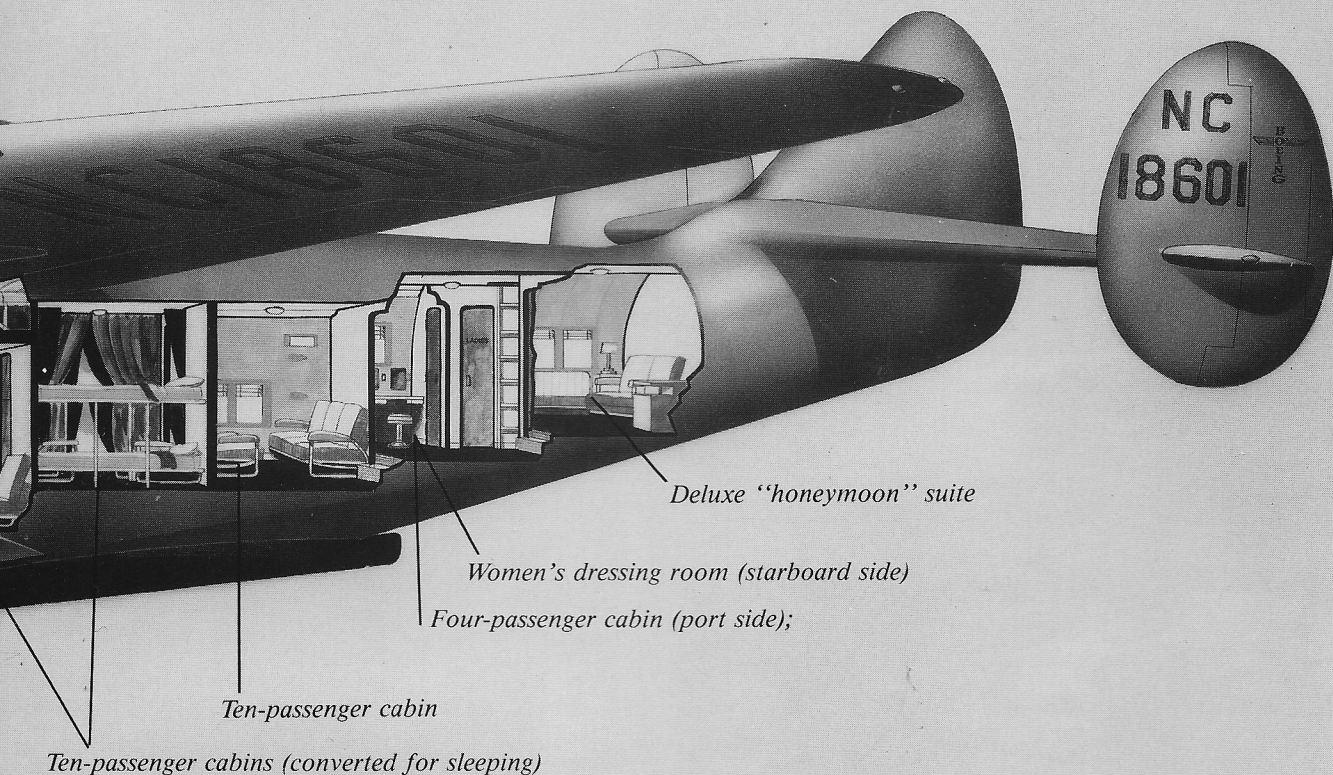
THE PRELUDE OF AIR MAIL SERVICE having proven successful, on June 28, 1939, Pan American was ready to attempt its greatest ambition: flying passengers between America and Europe. Even the weather was auspicious—a beautiful summer day with a nearly cloudless sky. Residents of Port Washington were also caught up in the excitement of the event, and a “semi-

holiday” was declared. When buses carrying the passengers and reporters arrived at the city limits, a police motorcade met and escorted them down colorfully decorated streets to the seaplane base. There the town’s eighty-five-member high school band, in blue and white uniforms, played selections while newsmen photographed the air-bound passengers and crew.

There was more than just popping flashbulbs and fanfare. The citizens of Port Washington saw this flight as a momentous event linking the countries and peoples of two continents. After a benediction by the Rev. William J. Woon, John J. Floherty of the Chamber of Commerce presented the commanding pilot, Captain R.O.D. Sullivan, with three commemorative scrolls containing greetings for the mayors of Horta, Lisbon, and Marseilles.

At 3 P.M., the *Dixie Clipper*, with twelve crew members and twenty-two passengers aboard, cast off her lines and taxied out onto Manhasset Bay. Numerous sailing craft and motorboats were on hand to bid “bon voyage”; they were kept a safe distance by a company lookout boat that also inspected the water for drifting debris. Thousands observed from the shoreline.

Boeing 314 Pan American Clipper



Pan American president Juan Trippe's vision and drive were the keys to the airline's success in achieving transatlantic passenger service. But another individual's foresight and enterprise played an important role in providing the huge Boeing 314 seaplanes (above) that bridged the Atlantic. When in 1936 Trippe challenged Seattle's Boeing Airplane Company to build a true oceanic airliner, the manufacturer was overworked with other projects and declined to compete for a contract. But a young Boeing engineer named Wellwood Beall began working at home on his own time to design a super flying boat. On paper, he created a large hull with lounges and staterooms, and combined it with Boeing's huge

XB-15 bomber wing. For power he selected four of Wright Aeronautical's new double-row Cyclone engines capable of producing a total of six thousand horsepower. The result was an airliner unprecedented in size, power, range, and load-carrying ability. Then Beall took his plans to work and showed them to company managers. They listened—and were astonished. They were also so impressed with Beall that they made him supervisor of an eleven-man team to finalize details of the design. Two months later Boeing president Claire Egtvedt traveled across the country to Pan American's main office with the blueprints in hand, and on July 21, 1936 signed a \$4.8 million contract for six of the aircraft.

Turning into the breeze, Captain Sullivan watched the lookout boat drop a checkered flag to signal that the takeoff area was clear. Then he opened the throttles to full power and the *Dixie Clipper* surged ahead, spray enveloping her sides.

Inside the cabin, passengers peered intently through the windows. Prior to embarkation they had displayed

surprising poise, answering reporters' questions in a jovial manner. But beneath the placid surface was courage. They were placing their trust—their very lives—in the crew and aircraft. They were pioneers in spirit, the first revenue passengers to cross the Atlantic Ocean by airplane: W.J. Eck, Captain Torkild Rieber, Colonel *Article continues overleaf; text continues on page 46*

CULVER PICTURES, INC., NEW YORK CITY



Flying the Clippers

CROSSING THE ATLANTIC in a Pan American Clipper back in 1939 was an unforgettable experience. You checked in with your luggage at the Port Washington terminal, then walked down a ramp to a floating dock and boarded the plane as you would a ship. Once seated, anticipation grew as the engines warmed up and the crew cast off the mooring lines. The Clipper taxied out to open water with a steady motion if the sea was calm. But if it was rough, you knew you were in a boat—one with wings.

The takeoff was thrilling. The engines' thunder was but a muffled rumble inside, but large windows af-



forded a fine view of the action taking place. You could feel the acceleration and sense the change in pitch as the seaplane rose onto the step of the hull and reached a planing attitude. Then, breaking free from the friction of the water and the pull of gravity, the plane slowly climbed to cruising altitude.

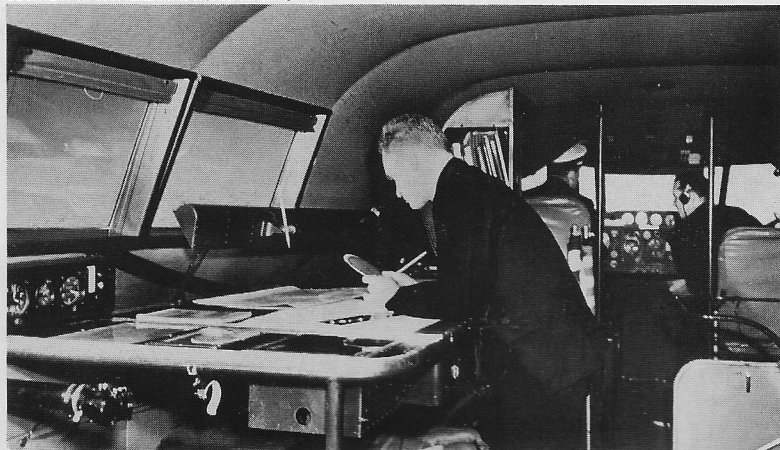
En route, the airliner lumbered along through the lower depths of the atmosphere at a cruising speed of about 150 miles per hour—not much faster than Charles Lindbergh on his New York to Paris flight. At an altitude of seven thousand or eight thousand feet, this wasn't anywhere near the upper, rarified domain

Minutes before takeoff, transatlantic passengers board a Pan American Clipper via a gangplank and one of the flying boat's distinctive "sea wings." Designed to provide stability for the aircraft on the water, the sponsons also served as reservoirs for 1,500 gallons of fuel.

of today's jetliners, and the flying boat encountered a wide range of weather conditions, including adverse winds and turbulence.

Your view depended on the visibility. During clear

COURTESY OF PAN AMERICAN WORLD AIRWAYS



weather the seemingly endless expanse of ocean below took on a dark, blue-gray hue. When there were cloud formations along the way, the plane flew among and through them, providing an incredible sight of great valleys, ravines, buttresses, and towering minarets. At night the sky was ablaze with stars that appeared so close you felt you could almost touch them.

Passengers weren't cramped back then. The cabins (there were a half-dozen on the Boeing 314) were spacious, and the comfortable seats had plenty of leg room. The "modern interior" was art deco in design with lounges colored "skyline green" and "Miami sand beige." Coordinated carpets enhanced the setting. At night the cabins became Pullman-like sleeping compartments closed off by "Pan American blue" curtains; each berth had a window, reading light, ventilator, steward call button, and a clothes rack with hangers. The aft deluxe suite featured a love seat, coffee table, combination dressing table and writing desk, and a davenport-style seat that converted into a bed.

In-flight service was superb. The dining room could accommodate fourteen passengers at a sitting. Uniformed stewards served gourmet meals on polished black walnut tables covered with Irish linen, bone china, silverware, and European crystal. Vintage wines complemented the courses.

After dining, you might pass the hours by conversing with other passengers*, playing cards, reading, following the Clipper's progress on a chart of the North Atlantic, sitting back and sipping a Scotch or a French aperitif, or just looking out the window and losing yourself in the resonant rhythm of the engines. Finally, it was time for a steward to transform the cabin seats into comfortable upper and lower berths, and you turned in for a night of dreamless sleep.

The aerial journey across the North Atlantic was a long one in 1939. For example, on the northern route

**"There is excellent conversation in three or four languages," noted a 1940 Life article on the transatlantic Clipper flights, "and a striking absence of social ice to break, for the air and the [European] war combine to produce an easy good fellowship of the Atlantic traveling elite."*

A view of the Clipper's spacious flight deck (above) shows the navigator at his station and the pilot and copilot up front on the "bridge." Once en route, the navigator was the busiest of all crew members, for he had to keep constant track of the aircraft's position, altitude, course, speed, and drift, using dead reckoning, celestial sightings, and bearings provided by the radio operator. Today the skillful navigator is a memory, replaced by a computerized inertial navigation system. The pilot navigates by pressing buttons.

from New York to Great Britain, the Pan American Clipper took about five hours to reach Shediac, New Brunswick; three more hours to Botwood, Newfoundland; fourteen additional hours to Foynes, Ireland; and another three hours to Southampton, England. Total flying time: twenty-five hours. This figure varied somewhat with the intensity of the winds aloft.

But the plane also spent an hour refueling at Shediac, an hour and a half at Botwood, and an hour at Foynes before commencing the last leg to Southampton. So, if you left New York early in the morning, you arrived at Southampton in the afternoon of the following day.

The trip was expensive! The round-trip fare between New York and Southampton was \$675—the equivalent of about \$7,000 today. As a result, the first international "jet setters" were royalty, movie stars, the rich, and a few aviation enthusiasts who had been able to save enough money to make the trip. For most Americans in 1939, a transatlantic flight had to be a vicarious experience. But despite the high cost, national interest in the Clipper flights was high. People realized that these ocean crossings marked the start of a new epoch in air travel.

As for the Pan American air crews, both pilot and copilot were expert mariners as well as experienced aviators. They had to be able to judge the effects of water currents and winds on their aircraft while taxiing, taking off, and landing—a skill learned through years in



seaplanes prior to upgrading to the Boeing 314.

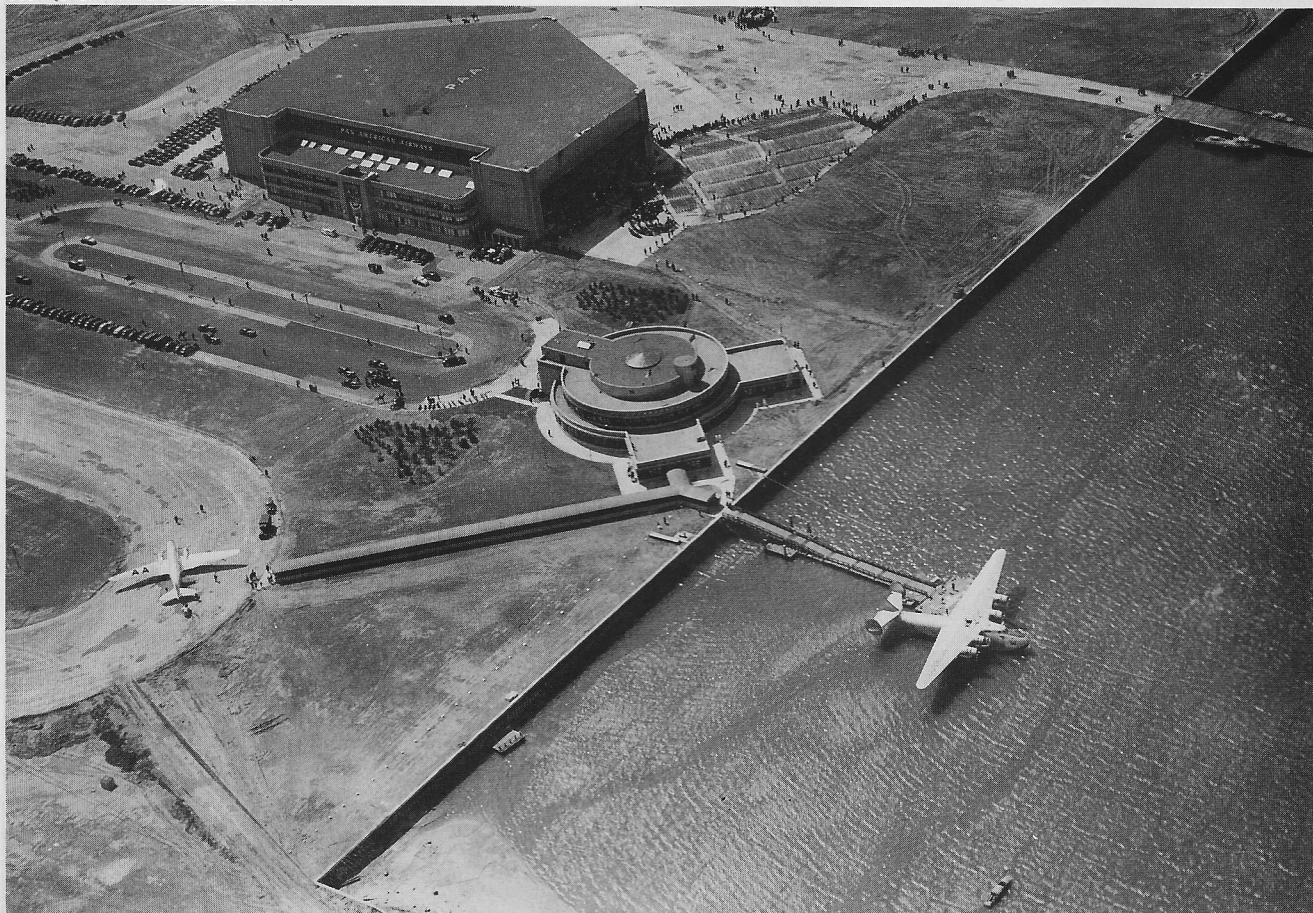
Once on course and at cruising altitude, much of the actual flying was left to the automatic pilot while the flight crew monitored the instruments and weather conditions ahead. Behind the pilots on the flight deck or "bridge" stood the navigator at his station, a seven-foot-long chart table for plotting courses and fixes. The navigator also had access to a celestial observation dome for "shooting" the sun and stars with an octant. Across from him sat the radio operator at his desk with communications equipment and a direction finder. The seaplane carried three transmitters and four receivers: redundancy assured safety. Seated just aft was the flight engineer, who monitored the engines and aircraft systems at a panel containing twenty-six instruments, throttles and pitch controls, and numerous switches. If necessary, he could tread on catwalks inside the wings to inspect and service the engines while in flight.

Because the transatlantic crossing was so long, a second aircrew shared the tasks. Totalling all crew members, including the stewards, there were enough to compose a football team. Off-duty crewmen could rest or sleep in their own quarters in the nose of the aircraft.

Served by a uniformed steward, travelers aboard the Boeing 314 enjoy a fine meal on linen-covered tables with china and silverware. Vintage wines and "Classic" Coca Cola complement the course—and the little boy has his glass of milk. When not used for meals, the dining compartment doubled as the passenger lounge.

The flying boat slowly plodded nearly two thousand miles over the ocean. Then, at last, landfall! Sighting Ireland was a welcome event for crew and passengers as the coast gave way to a carpet of green. How beautiful the earth! The River Shannon appeared. A castle loomed into view below as the plane banked and descended to alight on the river by the small town of Foynes. The aircraft skimmed the water's surface with a "swish." The landing completed, the plane turned toward the base. There townspeople waited to greet the voyagers from America.

Playwright and editor Clare Boothe Luce flew the North Atlantic on one of the Pan American Clippers. "Fifty years from now," she wrote, "people will look back on a Clipper flight as the most romantic voyage in history." Her words were prophetic. ★



American terminus of the transatlantic air route during 1940-41 was the North Beach (subsequently La Guardia) airport on Bowery Bay. Here one of Pan American's Boeing 314s floats alongside the pier while a DC-3 embarks passengers on shore.

William Donovan, Roger Lapham, Clara Adams, Mrs. Sherman Haight, J.H. Norweb, Louis Gimbel, Jr., H.L. Stuart, Ben Smith, Russell Sabor, Mark W. Cresap, Julius Rapoport, James McVittie, Mr. and Mrs. C.V. Whitney, Mr. and Mrs. Graham Grosvenor, Mr. and Mrs. E.O. McDonnell, Elizabeth S. Trippe, and John M. Franklin.

Gradually the *Dixie Clipper* gained speed and rose onto the step of her hull. Then, planing cleanly, she broke free and lifted gracefully into the air. Climbing, she circled Port Washington and then turned toward the ocean's expanse.

The historic two-day flight proceeded uneventfully to Marseilles with stops at Horta and Lisbon. The return flight arrived at Port Washington on July 4, and four days later the *Yankee Clipper* expanded passenger service to Southampton via the northern route with stops at Shediac, Botwood, and Foynes. Weekly trips followed in each direction over both routes.

Bolstered by the excellent performance of the Boeing 314s, Pan American ordered six more in September

1939. On March 31, 1940 the company transferred its New York base from Port Washington to its new North Beach [later LaGuardia Airport] terminal on the shoreline of Bowery Bay.*

PAN AMERICAN'S widely-acclaimed transatlantic air service was destined to remain in the limelight for less than two years. In August 1940 the company diverted three of its new flying boats to Britain to help that nation beset by the outbreak of World War II. Then America became involved in the conflict, and the U.S. War Department requisitioned the company's remaining Boeing 314s. Painted in camouflage, they served with the Army Air Force and Navy as military transports, making thousands of vital flights around the globe. In January 1943 one carried President Roosevelt to and from the Casablanca Conference in Africa—the first time that a president had traveled out of the country by air.

The Boeing 314s returned for commercial service af-

**During the harsh winter of 1939-40, weather conditions limited most crossings to the southern route via the Azores. High seas at Horta often prevented even these flights and sometimes delayed the Clippers for weeks at a time. And freezing harbors forced Pan American to successively move its East Coast terminus from North Point to Baltimore, Maryland; then Norfolk, Virginia; Charleston, South Carolina; and finally Miami, Florida.*



The luxurious flying boats that opened the Atlantic air route are all gone now, but Pan American's marine air terminal at La Guardia Airport, seen here during its 1940s heyday, has been restored to its former "art deco" elegance and serves the airline's New York-Boston shuttle route.

ter the war, but accelerated development of long-range landplanes and the construction of large airports around the world had by this time rendered the flying boats obsolete. Pan American continued to fly its famous seafaring Clippers between America and Europe only until December 1945.

Today the North Atlantic, the world's busiest airline traffic corridor, is routinely traversed by the advanced jets of Pan Am and other international carriers. But their existence and the relative dependability of the travel they provide are direct results of aviation progress made possible by Pan American's foresight and that first giant leap with the Boeing Clippers.

None of the pioneering Boeing 314 flying boats survive. All were eventually lost in accidents or destroyed for scrap after passing into the hands of smaller operators. The last Boeing 314 sank during a storm in Baltimore harbor in 1951.

At La Guardia Airport, the Marine Air Terminal is still in use, now serving Pan American's New York to

Boston shuttle. This beautiful building—now a historic landmark—is rich in art deco design with exquisite embellishments such as sculptured dolphins and artist James Brooks's huge mural depicting the Clippers and other aviation milestones. (In the 1950s the mural was covered with green industrial paint, but, through the efforts and funds of Geoffrey Arend, DeWitt Wallace, Laurence Rockefeller, and the Port Authority of New York and New Jersey, the artwork was restored and rededicated in 1980.)

Outside the terminal, visitors may find it difficult to imagine that flying boats once operated from the site. The seaplane mooring jetty is gone, and jet traffic screaming off adjacent runways dissolves any atmosphere of yesteryear.

But at Port Washington the setting is more conducive to visualizing the past. Visitors can see the old seaplane base and hear gentle waves lapping on the ramp. They can watch seaplanes still being used by the nearby charter firm of Ventura Air Service. And amid the sound of small aircraft taking off is the occasional greater roar of a Wright Cyclone engine. In one's mind's eye the *Yankee* or *Dixie Clipper* can be seen planing on the water's surface . . . rising majestically into the sky . . . and banking toward the east. ★

Richard K. Schrader is a commercial pilot with numerous writing credits.

America's First Ladies *Continued from page 31*

THE KENNEDY YEARS (1961-1963) revised the role of First Lady—a feat accomplished through a full understanding of the public relations value of an attractive woman in the White House. Jacqueline Kennedy was the first to name her own press secretary, although in an interesting contradiction, she instructed the press secretary to shield the presidential family from reporters rather than promote coverage.

Television and news cameras abounded in Washington and most of them seemed trained on the charismatic, youthful Kennedys. Jackie, the youngest First Lady since the 1880s, merited special notice, and her fame spread beyond national borders. Foreign magazines ran features on her clothes and her children, and when she traveled abroad, either with the president or alone, she went as a celebrity.

Jackie ignored many of the tasks accepted by previous First Ladies. Citing health considerations and obligations to her children, she avoided luncheons and other appearances that Mamie Eisenhower had taken for granted. In her place Jackie sometimes sent her husband and occasionally her chief pinch-hitter, Lady Bird Johnson, but much of the time she simply refused to go. Her role in the restoration of the White House garnered so much national attention that she could avoid smaller forums, and her spectacular success in that project showed how valuable a president's wife could be.

Lady Bird Johnson (1963-1969) took the hint. In 1964, she campaigned on her own through several Southern states—although Eleanor Roosevelt had not long before found such partisanship unladylike, and Lou Hoover had refused even to wear a campaign button for her husband.

Once ensconced in the White House, Lady Bird assembled the largest staff ever directed by a First Lady, and even that number did not suffice for her many activities. Some workers, on loan from other agencies, remained for the duration of her stay. Her project of national “beautification,” a name she dis-

liked but upon which she could not improve, focused on preserving the beauty and spiritual value of the environment. She traveled across the country planting trees and riding rapids, involving local groups in the preservation of their communities. By the time Lady Bird left the capital in 1969, reporters were calling her “quite possibly the best First Lady we have ever had.” None who followed would dare ignore her example.

Pat Nixon (1969-1974) campaigned tirelessly for her husband Richard and, when he won, gamely listed her projects. Unfortunately for her, none of them really caught on before she moved on to something else: a call for voluntarism was followed by a literacy campaign and then by a vague plea for a better environment. When her husband resigned in 1974 after Watergate, few Americans recognized in the rather stiff figure they saw on television any remnant of the gentle, likable woman who had charmed reporters when dealing with them privately.

The Watergate scandals caused Americans to place a high premium on candor, and they found an ally in Betty Ford (1974-1977). Within days of her husband's elevation to the presidency, she held her own news conference, surprising reporters with her frank views on such controversial matters as abortion, the possibility that her children had experimented with drugs, and the difficulties of full party loyalty. Betty had often been tempted, she said, “to split my ticket”—hardly a predictable announcement from a political party leader's spouse.

Within months of moving into the White House, Betty learned that she had breast cancer. Only two decades earlier, President Eisenhower's press secretary had refused to divulge the exact nature of surgery on Mamie, relying on a euphemism to communicate that she had undergone a hysterectomy. The Fords, on the other hand, made mastectomy a household word, and thousands of women across the country flocked to their physicians for checkups.

At that time Betty fully realized the power of First Ladies. “Lying in

the hospital,” she wrote, “thinking of all those women going for cancer checkups because of me, I'd come to recognize more clearly the power of the woman in the White House, not my power, but the power of the position, a power which could be used to help.”

Rosalynn Carter (1977-1981) demonstrated even more effectively how the power of the First Lady could be used politically. Not only did she break precedent before her husband received his party's nomination—she continued to do so after he won. Well before the 1976 Democratic convention, Rosalynn went out on the road alone, campaigning each Monday through Friday and returning to Plains, Georgia for the weekend. Both she and her husband understood that they could cover more territory if they traveled separately. Most of the women whose husbands later sought the presidency followed her example.

Once in the White House, Rosalynn added to the First Lady's functions in previously untried ways. She sat in on cabinet meetings and had regular “working” lunches with the president. In the spring of 1977 Rosalynn made an unprecedented trip to Latin America, where she conferred with leaders of seven Central and South American countries on defense and trade matters. No other president's wife had ever done anything similar. Eleanor Roosevelt had gone on fact-finding missions and Lady Bird Johnson had attended funerals for other nations' leaders, but Rosalynn acted virtually as a secretary of state. She tutored for the mission by conferring with members of the State Department and the National Security Council, and she worked to improve her Spanish. But when she returned, the First Lady faced criticism from reporters such as Meg Greenfield, who (echoing critics of Abigail Adams) addressed Rosalynn as “Mrs. President.” Greenfield asked Rosalynn to whom she would report since she had been neither appointed nor elected.

The competent, involved approach of women such as Rosalynn

Continued on page 50

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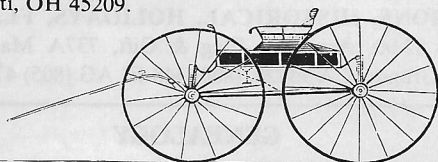
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Carter suited the feminist-oriented 1970s, but Nancy Reagan (1981-1989) had little intention of following that lead. When she arrived in the capital, Nancy insisted on bringing elegance back to the White House, engaging Letitia Baldrige (who had worked with Jacqueline Kennedy) to insure that protocol was followed. The plain, "down home" manner of the Carters, who sometimes carried their own luggage and who walked down Pennsylvania Avenue to the White House after the inauguration, was not her style.

She set out to refurbish the White House (in which Rosalynn Carter had shown little interest) and she donned expensive designer clothes. But when criticism flared about her extravagance, Nancy toned down her purchases, promised to return to the designers or to donate to museums clothing given to her, and tackled a highly publicized campaign against illegal drug use. Nancy's "Just Say No" program gained her international coverage, and she invited wives of other nations' leaders to meet at the White House for a conference on the subject.

By the time her husband's second administration began winding down, Nancy's influence had become clear. The *New York Times* had described her as an "associate president," and she admitted her role in the firing of the president's chief of staff in early 1987. At that time she had insisted that her husband was not strong enough to handle a press conference on his role in the Iran-Contra affair, whereas Chief of Staff Donald Regan thought the only defense was to answer questions and strike back. Like many other First Ladies, Nancy believed that her first responsibility was to look after her husband's well-being—both physical and political—and she intended to do that without apologies.

Regan retaliated with his own account of the First Lady's influence. He claimed Nancy had repeatedly consulted an astrologer and then imposed advice obtained from that source on the president's schedule and travel plans.

During her eight years in the White House, Nancy Reagan summed up the first two centuries of

First Lady history. Having begun as a ceremonial figure content to be judged on how well she dressed and hosted official parties, she shifted into a more substantive role when her ratings with the public dropped. After her increased involvement in the anti-drug program, Nancy's popularity immediately rose, showing that Americans had come to expect their First Lady to perform more than merely ceremonial tasks.

To Barbara Pierce Bush (1989-) falls the task of initiating the First Ladies' third century. Her mandate seems clear. She must serve as the nation's head hostess, as Martha Washington did, and she must lead projects of her own. She can expect continuous public attention and can anticipate virtually unlimited criticism. Hers is not an easy assignment. Two centuries of First Ladies have shaped the post into what is sometimes called "the most demanding, unpaid, unelected job in America." ★

Betty Boyd Caroli lives in New York City where she writes on women's roles and on immigrants, especially Italians.

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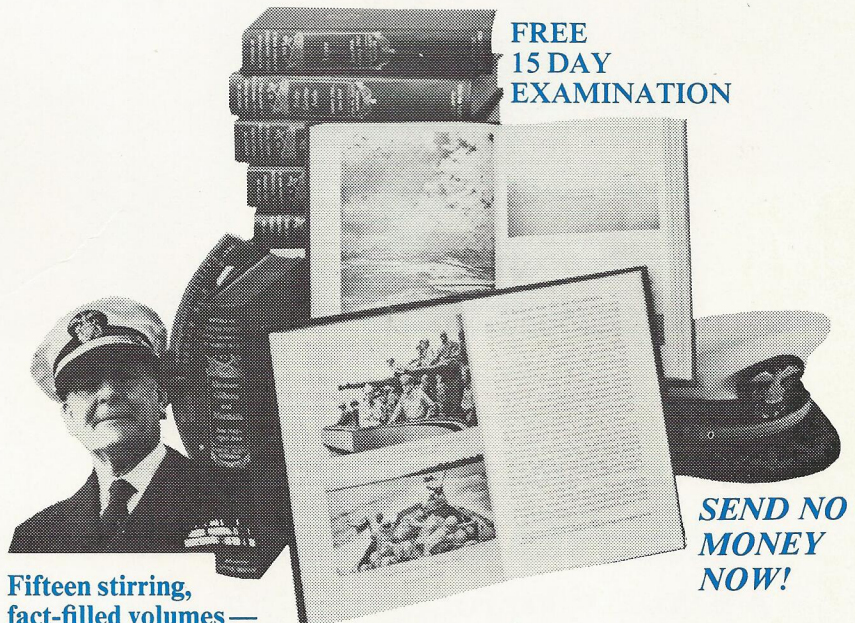
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